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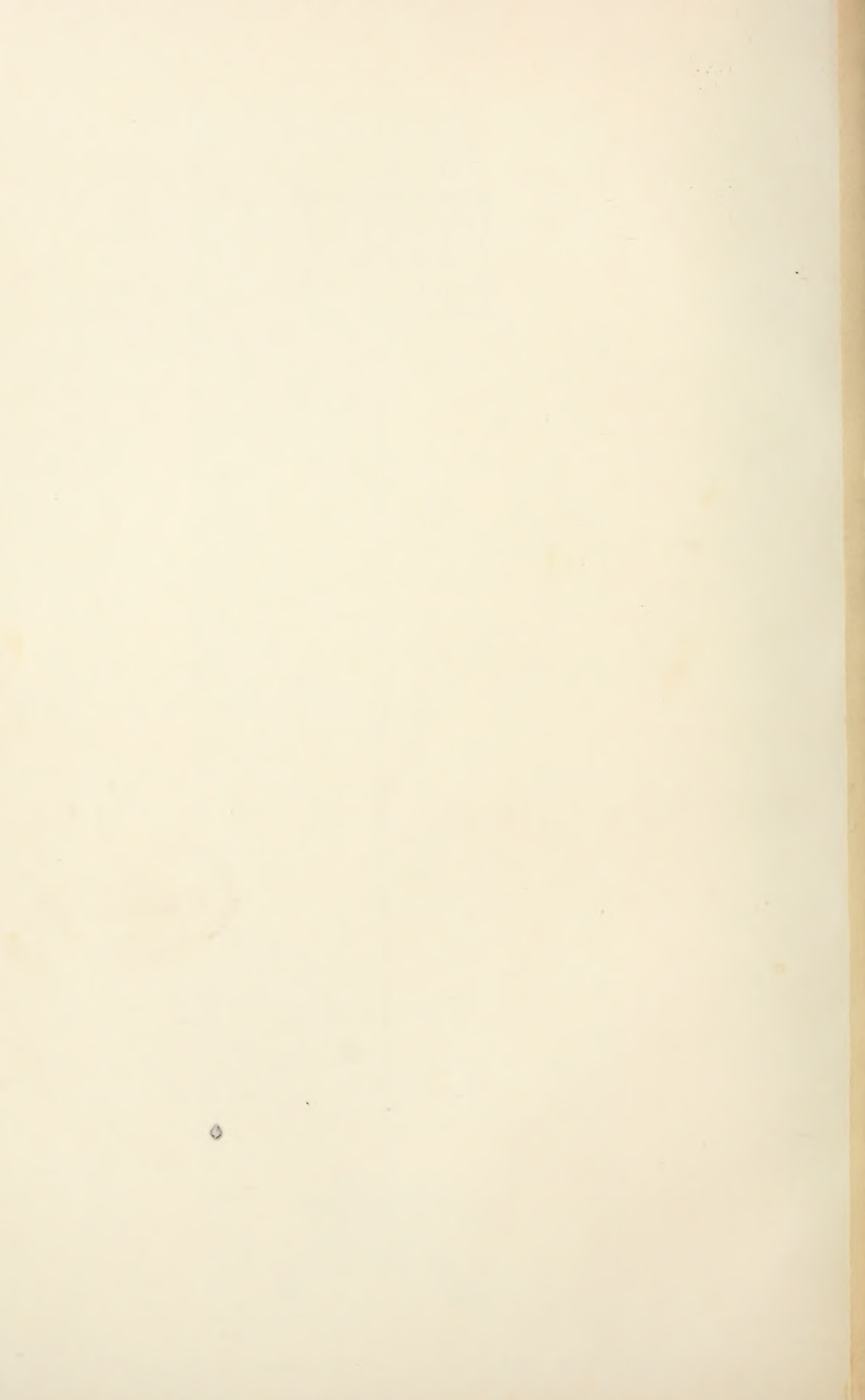
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FIELD COLUMBIAN MUSEUM

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REPORT SERIES.

VOL. I, No. 4.

ANNUAL REPORT OF THE DIRECTOR

TO THE

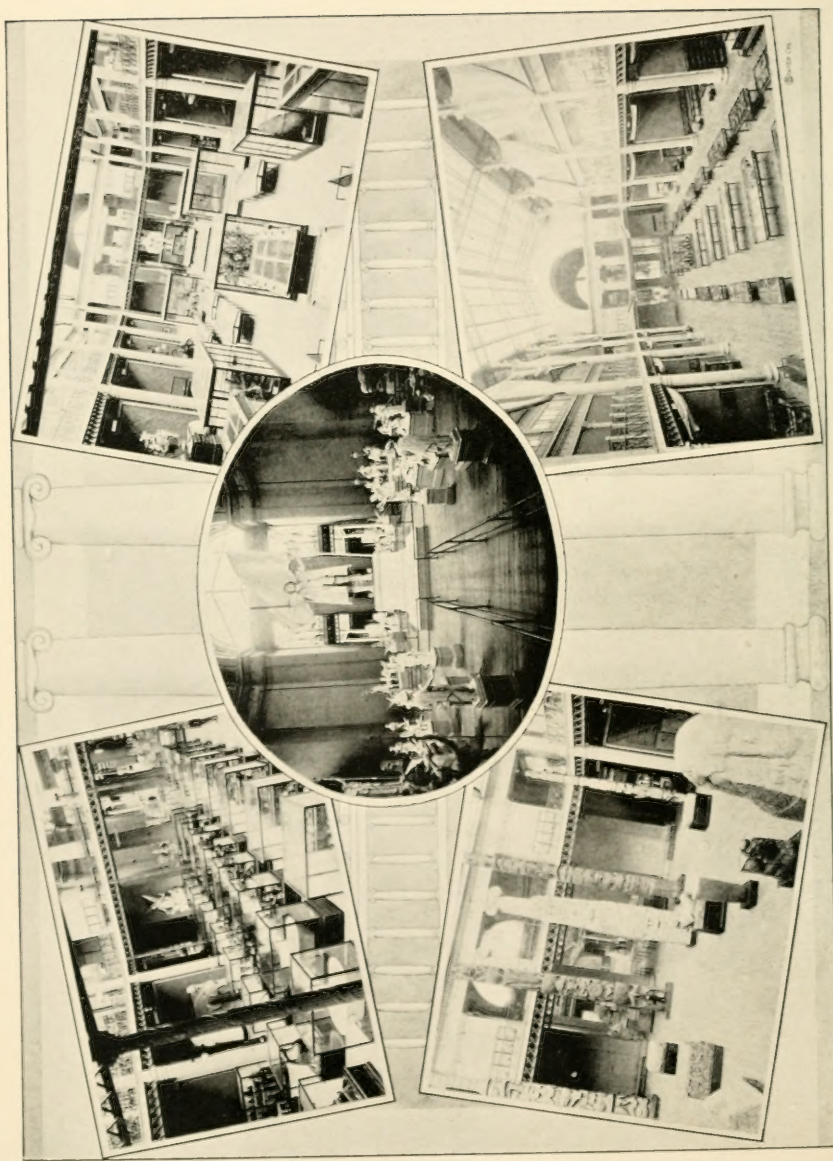
BOARD OF TRUSTEES

FOR THE YEAR 1897-98.



CHICAGO, U. S. A.

October, 1898.



THE FIVE GREAT COURTS—FIELD COLUMBIAN MUSEUM.

CONTENTS.

[illegible]

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ANNUAL REPORT OF THE DIRECTOR.

1897-1898.

To the Trustees of the Field Columbian Museum :

I have the honor to present a report of the operations of the Museum for the year closing September 30, 1898. The same uniform, steady, and systematic work that was in progress at the time of the last report has been maintained during the past twelve months, marked by a spirit which seems to pervade the institution, always leading to a higher standard of strictly scientific treatment and an increasing regard for popular demand. The routine of the Museum has been excellent, and the general method of operation confirms the wisdom of the original plans. It will be observed, as details are presented, that the claims of each department and of each feature of the scope of the Museum, as well as the requirements of the institution as a whole, have had consideration and have received a proper share of attention. The concert of action on the part of the staff during the past year has been especially gratifying in an individual sense, and of course productive of much benefit collectively. Without in the least abating an interest in original research and in special work in the laboratories, a broader policy has marked each department in the treatment of those principles of Museum work that appeal to the public and concern the great mass of people to whose betterment and uplifting institutions of this character are dedicated. With the exception that in nearly all departments and sections the working force has been strengthened as the necessities of each case seemed to require, there have been no changes in the personnel of the staff. It is fair to assume, therefore, that its members enter upon the new year with increased capacity to meet the growing requirements of their respective stations, and with added interest in and devotion to the work assigned to each.

INCOME AND MAINTENANCE.—The annual budget, approved by the Executive Committee, provided the sum of \$102,000 for the maintenance of the Museum for the fiscal year. The actual amount expended was \$88,020, leaving a balance within the anticipated expenses for the year, of \$13,980. In addition to the cost of maintenance, sums were

expended for collections and for new installations, expeditions, etc., that brought the total to \$111,940, the deficit being met by individual contributions and by the sale of certain securities. An analysis of the itemized financial statements appearing elsewhere in this report, will convey the suggestion that a large proportion of the deficit, including expenditure for new material, is accounted for in the cost of guards, protection from fire, and repairs to the building. That the total outlay, however, so nearly approaches the income from all sources under the constant pressure for funds that the growth and development of the institution creates, and the proper protection that the building requires is, it would seem, rather satisfactory than otherwise. The books of the Museum have been compared with the Treasurer's statements, and a certificate of agreement issued.

THE MEMBERSHIPS.—The annual memberships have decreased during the year, owing to the fact that life memberships were taken by a number of persons who were previously annual members. In accordance with the instructions of the Executive Committee, no effort was made to increase the annual membership, and the list now of record comprises those who have voluntarily renewed their annual subscriptions. The attendance of annual members has been considerably larger than in any previous year.

LECTURE COURSES.—The spring and autumn lecture courses, comprising Course Number Eight in October and November, 1897, nine lectures, and Course Number Nine in March and April, 1898, nine lectures, were attended more largely than had been the case theretofore. In fact, with one or two exceptions, the capacity of the lecture hall has been inadequate to the demands for admission, several hundred people being ordinarily unable to gain admission, and the number of those disappointed, in one case at least, approximating one thousand. With one exception, the eighteen lectures under consideration were illustrated, and the lecturers, except in five instances, were members of the staff of the Museum. A perusal of the subjects presented will give an idea of the range and variety of the topics and will account for the interest manifested by the public in their delivery. Following is the Eighth Course, delivered in October and November, 1897, with subjects and lecturers:

Oct. 2.—The East African Expedition—"London to South of Toyo Plain."

D. G. Elliot, Curator Department of Zoology.

Oct. 9.—The East African Expedition — “Toyo to Ogaden and Berbera.”

D. G. Elliot, Curator Department of Zoology.

Oct. 16.—“How Plants Travel.”

Dr. C. F. Millspaugh, Curator Department of Botany.

Oct. 23.—“Gold Placer Mining.”

Mr. Henry W. Nichols, Assistant Curator Department of Geology.

Oct. 30.—“The Beetles of Chicago and Vicinity.”

Mr. Edward B. Chope, Assistant in Department of Zoology.

Nov. 6.—“A Visit to Queen Charlotte Islands.”

Dr. G. A. Dorsey, Assistant Curator Department of Anthropology.

Nov. 13.—“The Home of the Tsimshians.”

Dr. G. A. Dorsey, Assistant Curator Department of Anthropology.

Nov. 20.—“The Salmon of the Pacific Coast.”

Dr. S. E. Meek, Assistant Curator Department of Zoology.

Nov. 27.—“Mammoth Cave.”

Prof. O. C. Farrington, Curator Department of Geology.

The following is the Ninth Course, delivered in March and April, 1898, with subjects and lecturers:

March 5.—“Mammoth Cave.” (Repeated by request.)

Prof. O. C. Farrington, Curator Department of Geology.

March 12.—“The Everglades of Florida.”

Dr. David T. Day, U. S. Geological Survey.

March 19.—“Oraibi—A Primitive Tusayan Pueblo.”

Dr. George A. Dorsey, Acting Curator Department of Anthropology.

March 26.—“Warning Colors and Mimicry in Animals.”

Prof. W. H. Dudley, Wisconsin State Normal School.

April 2.—“Zinc Mining and Smelting.”

Mr. H. W. Nichols, Assistant Curator Department of Geology.

April 9.—“Zoology—A Glance at the Leading Types of the Animal Kingdom.”

Prof. Frank Collins Baker, Curator of the Chicago Academy of Sciences.

April 16.—“A Tour of the Plant World.” (North America.)

Dr. C. F. Millspaugh, Curator Department of Botany.

April 23.—“The Archeology of Peru.”

Dr. George A. Dorsey, Acting Curator Department of Anthropology.

April 30.—“Historical Development of the Steam Engine.”

Prof. C. V. Kerr, Armour Institute of Technology.

There are now on hand 1,466 slides, classified by lectures as follows:

Department.	Total Number of Slides.	Number of Illustrated Lectures.
Anthropology,	262 slides	12
Botany,	315 “	8
Geology,	455 “	13
Zoology,	327 “	14
General,	107 “	3
Total,	1,466 slides	

In addition to their assignments on the regular lecture course of the Museum, the curators of the institution entered cordially into the *Chicago Record* course of lectures delivered at different public schools within the city, contributing very largely, as has been generously acknowledged, to the success of that undertaking.

PUBLICATIONS.—The publications of the Museum during the year have appeared from time to time as the opportunity for study, research, and observation presented itself and the importance of the subject matter dictated. The following list is presented, giving the titles of issues since the date of the last report, with the number of pages and illustrations:

Pub. 22.—Zool. Ser., Vol. 1, No. 8. “List of Fishes and Reptiles by Field Columbian Museum East African Expedition to Somali Land in 1896.” By S. E. Meek. 26 pages, edition 1,000, 2 illustrations (2 zinc etchings).

- Pub. 23.—Anthropol. Ser., Vol. 2, No. 2. "A Bibliography of the Anthropology of Peru." By Dr. George A. Dorsey. 150 pages, edition 1,000, no illustrations.
- Pub. 24.—Report Ser., Vol. 1, No. 3. "Annual Report of the Director." 92 pages, edition 2,000, 18 illustrations (14 half-tones and 4 zinc etchings).
- Pub. 25.—Bot. Ser., Vol. 1, No. 4. "Contribution III to the Coastal and Plain Flora of Yucatan." By C. F. Millspaugh. 66 pages, edition 1,000, no illustrations.
- Pub. 26.—Zool. Ser., Vol. 1, No. 9. "List of a Collection of Shells from the Gulf of Aden, obtained by the Museum's African Expedition." By Dr. W. H. Dall. 6 pages, edition 1,000, no illustrations.
- Pub. 27.—Zool. Ser., Vol. 1, No. 10. "Lists of Species of Mammals, principally Rodents, obtained by W. W. Price, Dr. S. E. Meek, G. K. Cherrie, and E. S. Thompson in the States of Iowa, Wyoming, Montana, Idaho, Nevada, and California, with Descriptions of New Species." By D. G. Elliot. 32 pages, edition 1,000, no illustrations.
- Pub. 28.—Anthropol. Ser., Vol. 2, No. 3. "Ruins of Xkickmook, Yucatan." By Edward H. Thompson. 22 pages, edition 1,000, 24 illustrations (3 zinc etchings, 7 drawings, and 14 half-tones).

The method of mailing these publications, of checking the acknowledgments, and of keeping the list correct as to changed and new addresses has been very satisfactory, and it is rare that complaints are received of improper direction or failure to receive the publications promptly. Such tardiness or neglect in acknowledging the receipt of these publications appeared to exist the first of the year that it was found necessary to send out a special circular letter reminding those to whom the publications had been sent of the importance of signing and returning the acknowledgments enclosed in the several publications. This not only enabled the institution to account for the distribution of publications, but was the indirect means of correcting

errors that had previously crept into the lists of addresses. The following table presents a record of the disposition of the publications of the institution by series:

OFFICIAL:

Trustees,	15
Staff,	11
Corporate Members,	3
Honorary Members,	3
Annual Members,	415

RECEIVED PUBLICATIONS IN ALL DEPARTMENTS:

	Domestic.	Foreign.
Individuals,	10	10
Universities, Schools, and Colleges,	59	35
Academies and Institutes,	29	17
Museums and Gardens,	6	35
Scientific Societies,	20	43
Libraries,	55	29
Government and State Departments,	8	2
Journals,	10	17

RECEIVED PUBLICATIONS IN ONE OR MORE DEPARTMENTS:

	DOMESTIC.							
	*A	B	G	H	I A	O	T	Z
Individuals,	81	56	73	..	..	12	1	31
Universities, Schools, and Colleges, . . . . .	..	28	6	..	2	1	1	8
Museums and Gardens,	9	8	6	..	..	..	..	6
Academies and Institutes,	3	1	2	1	1	..	2	1
Societies,	9	17	12	14	3	5	5	13
Libraries, . . . . .	..	2	1	19	..	..	..	1
Government and State Departments,	1	8	15	4	..	..	..	14
Journals,	13	8	6	..	..	2	2	4

	FOREIGN.							
	A	B	G	H	I A	O	T	Z
Individuals,	55	28	52	..	..	5	..	21
Universities, Schools, and Colleges, . . . . .	..	..	7	..	..	..	..	4
Academies and Institutes,	5	..	6	..	..	1	..	..
Museums and Gardens,	10	6	5	..	1	1	..	4
Scientific Societies,	6	7	12	..	..	3	1	17
Libraries,	1	..	..	..	..	..	..	..
Government and State Departments, . . . . .	..	5	11	..	..	..	..	..
Journals,	12	2	6	..	..	3	..	2

* A, B, G, H, I A, O, T and Z denote Anthropology, Botany, Geology, History, Industrial Arts, Ornithology, Transportation, and Zoology.

Acknowledgment is made of the continued obligation of the Museum for the facilities offered for the distribution of publications



AYER HALL.—NORTH AMERICAN ETHNOLOGY (PLAINS INDIANS).—FIELD COLUMBIAN MUSEUM.

by the Bureau of International Exchanges connected with the Smithsonian Institution. The fifth edition of the Guide was issued during the year. It has become rather bulky and it will doubtless be necessary within at least the next two years to divide the Guide into departments for the greater convenience of the public. The cost of the Guide in its present form so nearly equals the price that should be charged for such a publication that it does not yield the profit which its sale should reasonably bring to the Museum. The Museum has also issued from its own press 500 copies of a small pamphlet, "Herbarium, Field Columbian Museum."

LIBRARY.—The library at present contains 9,003 books and 9,630 pamphlets, distributed as follows :

	Books.	Pamphlets.
General Library,	6,944	6,822
Department of Geology,	1,072	2,530
Department of Ornithology,	368	....
Department of Botany, including Division of Photography,	298	233
Department of Anthropology,	134	45
Department of Zoology,	187	....

The additions during the fiscal year were 941 books and 1,949 pamphlets and bulletins, making a total of 2,890 titles, as against 2,213 for the preceding year. Of these 283 books and 550 pamphlets were added by purchase, and 20 books and 9 pamphlets by exchange for duplicate material. The bulk of the purchased books and pamphlets was derived from the library of the late Mr. Bebb, and came with the collection of plants bought by the Museum. Unfortunately, 95 volumes and 173 pamphlets were duplicates of material already contained in the library. The additions by gift and exchange for Museum publications consequently amount to 2,028 books and pamphlets. The number of periodicals subscribed for is 47; the number received in exchange or as gift, 50, exclusive of the publications of societies, academies, etc. A complete list of the accessions to the library accompanies this report. Among the gifts, special mention is made of the receipt of the second part of the "Galerie Américaine du Musée d'Ethnographie du Trocadéro," by E. T. Hamy, presented by the Duc de Loubat. It is a magnificent representation on folio plates, with explanatory notes, of the American antiquities contained in the Museum. The same donor presented an interesting reproduction of the Mexican "Borgiano" manuscript. The Royal Society of New South Wales sent

20 volumes of its journals and proceedings, and the British Museum 22 of its valuable publications. The work of cataloguing the resources of the library has progressed steadily. The shelf list and the author catalogue have been kept up to date. The subject catalogue has been completed so far as regards the books, pamphlets, and separates, some 8,500 cards having been written during the fiscal year. The staff are anxious to have subject cards for the more important papers in the scientific transactions, proceedings, and bulletins; this work has recently been started and can be pushed with vigor during the next year. 372 volumes have been bound during the past year, involving an expense of \$300.60. The Union list of periodicals referred to in the last report has not been published yet, owing to the many difficulties of the undertaking, but it is hoped that it will be available for reference some time this winter. Of the duplicate catalogue of the John Crerar Library some 12,500 cards have been received and arranged in alphabetical order by authors. This accurate and carefully prepared catalogue is likely to be very useful to the Museum staff in many ways, besides preventing the duplicating of expensive books, and will surely repay the not inconsiderable work involved in its handling. The permission secured from the Chicago Public Library to draw out books is constantly made use of. While the members of the staff in this way have an opportunity of availing themselves of many important books not contained in the Museum library, it is nevertheless true that many standard works are yet inaccessible to them, and a moderate amount expended once for all for such books would add much to their facilities.

RECORDS.—This most essential and basic feature of the routine work of the Museum is in the highest degree satisfactory, and the assurance is gratifying that the receipt, the distribution, and the forwarding for storage, for exchange, for identification, etc., is accurately, systematically, and intelligently recorded. Several improvements have been made in the manner of keeping the records during the year. Heretofore no distinction has been made between the Departments of Zoology and of Ornithology, notwithstanding a different curator presided over each department. This division of material has been made with much labor, and separate sets of records are now maintained for each department. No systematic record has been kept of negatives, lantern slides, and photographs. As very many negatives, etc., have been acquired or made by the Museum, it was deemed advisable to open an accession book under the head, "Section of Photography and Illustration," purchases

being accessioned as they are acquired, while lantern slides and negatives executed by the Museum are entered at the end of the year. The library accession cards had hitherto not been indexed, chiefly owing to the fact that the elaborate system of cataloguing in the library had been considered sufficient. For the sake of ready reference, however, an index has been made and is kept in the Recorder's office. The records of the Department of Anthropology were virtually rewritten from beginning to end, the endless changes in the jackets having created much confusion in the records. The Recorder has now on file a catalogue of nearly all the collections in that department, a very satisfactory state of affairs. An exchange record was also opened during the year, reference to which at any time will show the status of an exchange account. The commercial idea of a ledger was used in this case as being the best means of recording such transactions. An index to the book renders reference to it comparatively simple. The distribution card originally adopted has been changed. The chief idea influencing this change was the fact that a considerable number of specimens sent out for examination had, on their return, to be re-accessioned. This also applied to material sent for examination, and thus the records were burdened with a number of entries that were more or less fictitious. To obviate these inconveniences a memo card was provided, which, in cases like the above, is held until the transaction is complete. In case of material sent for examination and returned, no entry is made in any book except the Transportation record, and this with the card, which is numbered and indexed, is all that is required for prompt reference. The total number of specimens accessioned during the year was approximately 74,200, not including the specimens secured by the Dorsey expedition.

DEPARTMENTAL CATALOGUING, INVENTORING, AND LABELS.—In no previous year has so much attention been given to this highly important but uninteresting and endless labor. Especially in the Departments of Anthropology and Zoology, and as it was demanded in the other departments as well, identification, numbering, and recording of historical data have been continued unremittingly. The results obtained form the most gratifying feature to which reference may be made in this report, and it is difficult to convey an adequate idea of the amount of hard work and unremitting attention required from both the heads of departments and their assistants in this task. The year's

work in the Museum on catalogues and inventories is shown in detail as follows:

	No. of Rec- ord Books.	Total No. of entries to Sept. 30, 1898.	Entries during 1897-98.	Total No. of Cards Written.
Anthropology,	24	27,149	17,960	41,989
Botany,	19	39,335	18,621	1,400
Geology,	10	18,575	3,616	.....
Library,	5	15,418	2,045	11,000 est.
Ornithology,	2	9,234	1,597	.....
Photography,	1	5,142	3,333	.....
Zoology	9	17,421	10,225	1,533

ACCESSIONS.—The year has been bountiful in the contribution of new material to the Museum. Accessions, by gift, by expedition, by exchange, and by purchase, have been generous, and, unlike other years, have been largely directed with reference to the actual needs of the different departments in completing series, suites, classification, and special plans. The accessions to the institution are classified as follows :

Source.	No. of Accessions.	No. of Specimens.
Gifts,	155	6,544
Loans,	4	236
Exchange,	25	4,226
Collected,	90	7,356
Purchase,	88	55,797

Among the more important accessions of the year should be mentioned the large collections from Egypt and Italy secured for the department of Anthropology by President Ayer. These include a large number of *Stellæ* tombstones, covering a long period of Egyptian history, a valuable addition to the already important collection of Egyptian and Etruscan jewelry, some important pieces of bronze, and two very remarkable stone tombs of the early Etruscan period. With the material obtained by President Ayer came a large collection of fabrics of the fifteenth, sixteenth, seventeenth, and eighteenth centuries, secured by Vice-President Ryerson, chiefly in Venice. This is a valuable addition to our already interesting collection of middle-age tapestries and fabrics. Rev. T. W. Woodside, for many years a missionary of Benguela, Africa, enabled the Museum to obtain a small but extremely valuable collection of ethnological objects from the native inhabitants of Portuguese Southwest Africa. A large collection of objects, numbering about 600 specimens, from remote islands of the Pacific, was purchased of Mr. W. T. Shepherd, of Boston. In April the Museum received its third consignment of ob-



MODEL OF THE MOON—FIELD COLUMBIAN MUSEUM.

(Diameter, 19 feet.)

jects from the Port Clarence Eskimo of Alaska. The Alaskan collection now numbers over 10,000 objects. In the Division of Physical Anthropology over 150 skeletons have been received, including many interesting specimens. Dr. R. Parkinson, of Ralum, Bismarck Archipelago, has presented this department of the Museum with 52 Papuan skulls from the Gazelle Peninsula of the Island of New Britain. This very valuable and highly appreciated gift was made in exchange for Museum publications. It is hardly necessary to remark that the transaction has left the Museum largely indebted to Dr. Parkinson. Not the least of the valuable contributions to this department resulted from the expedition of the Curator of the department to Arizona, of which mention is made elsewhere. The most important collection acquired by the department of Botany during the year was the complete herbarium of the late Mr. M. S. Bebb, including his library, letters, and drawings. Through this collection and that of Dr. Schott, obtained the previous year, the herbarium of the Museum has been in many important collections projected backward to the middle of the present century. Locally, the herbarium of Mr. Bebb is of great value, as it represents much of the flora of the Western States, and about all that of Illinois. His collections of willows is very complete and, in connection with his notes, drawings, and communicated types, is acknowledged to be the very best. Another collection of Yucatan plants has been received from Dr. Gaumer, consisting of many thousand representatives from old and new localities on the peninsula, which collection will form the basis of a fourth contribution to the flora of that region and will provide a large amount of valuable duplicate material for exchange. In addition to the above more notable accessions to the Department of Botany, the following sets have been acquired during the year: Pringle and Palmer's new Mexican material; Anthony's Insular Mexican collection; Lumholtz's Mexican plants; Peary Relief Expedition Plants of Labrador and Greenland; Schlechter's African centuries; Heller's Sandwich Islands, New Mexican, and Texan plants; Millspaugh's West Virginian and New York plants; Pollock's West Virginian species; Lotentz and Hieronymus' Argentine flora; Allen's plants of the Cascade Mountains; Dr. Edward Palmer's Florida collection of 1874; Franchsschi's Grecian plants; Lansing's centuries of the plants of the Lake Michigan Basin; and the Curator's plants of Mackinac Island. In Geology, the gift of Mr. L. W. Reese, of Chicago, of the Schmidt-Dickert relief model of the moon is a notable acquisition. This great model, 19 feet in diameter, exhibits with scientific accuracy the surface features of the moon. It was prepared

with great care from the charts of Beer and Madler and of Dr. Schmidt of the Athens Observatory, undoubtedly the greatest authority upon the topography of the moon of his time. Five years were occupied in its construction. The sections of the model have been kept for some years in Chicago, but they have not been available for observation until the gift of Mr. Reese made possible its erection by the Museum. It is believed that the model as exhibited will prove of great interest to the public in general and especially to students of astronomy. Besides the collections made in the field by the Curator and his assistants, mention of which is made under the proper heading, many additions of value have been gained through gift, purchase, or exchange in the Department of Geology. The meteorite collection has been enriched by several fine specimens. These include, among others, sections of the Roeburne, Mungindi, San Angelo, Tonganoxie, and Sacramento Mountain meteorites. A magnificent specimen of aurichalcite, undoubtedly the finest in existence, has been added through the generosity of Captain A. B. Fitch. A fine series of stalactites and other cave products from Mammoth and Wyandotte Caves was received from E. B. Baldwin. Other cave specimens of unusual beauty have been obtained by purchase and exchange, and the collection in this line is now one of unusual size and value. A collection of varieties of candles made from petroleum has been donated by the Standard Oil Company and makes an attractive and economic display. R. W. Goodell gave a fine specimen of fossil fish from the Green River, Wyoming, beds; G. H. Hammond a large and complete collection illustrating varieties of clay stones, and Mr. C. C. Hafer a series of Trenton fossils from Minnesota. Two tusks, several teeth and leg bones of great size, of the Mammoth, brought from Alaska by Miner W. Bruce, have been received as a loan and placed on exhibition. An unusually perfect skull and part of a skeleton of a species of *Elotherium* were obtained by purchase. A petrified egg of a miocene bird acquired at the same time deserves mention as being a specimen of more than usual scientific interest. Specimens of a number of rare minerals were obtained by exchange with Dr. Otto Kuntze, and many fine specimens of crinoids of the Burlington group by exchange with J. M. T. Myers. Miscellaneous minerals and fossils of value were obtained by exchange with the Case School of Applied Science. Four beautiful slabs of marble, donated by the Georgia Marble Company, deserve mention, also a large collection of ores and minerals of economic value from the Nashville, Cincinnati, and St. Louis Railroad: about 1,200 briquettes from George H. Hartwell; a collection of silver-

lead ores of the Kootenai District from R. I. Kirkwood, and a collection of Colorado ores from Mrs. E. F. Dyche. Many valuable specimens, illustrating Western ores and minerals, were secured by the Curator and Assistant Curator while visiting the Omaha Exposition, and other specimens have been promised by the exhibitors there. In the Department of Zoology the largest contribution of material has come from the expedition of its Curator to the Olympian Mountains and the Northwest, comprising about 520 specimens. President Ayer presented the department with thirty-four rare mammal skins with their skeletons, from Madagascar, collected by Dr. Forsyth-Major. The American Museum of Natural History presented a very valuable amount of exchange material, including buffaloes, greenland seals, walruses, etc., etc. Mr. Frank C. Bestock presented a valuable lot of material. Mr. Chope, an assistant in the Division of Entomology, collected several thousand specimens during the year. Dr. Meek, Assistant Curator of Ichthyology, was very successful in two expeditions. By purchase the department has acquired numerous specimens of fishes and many very valuable skins, as will appear from the detail list of accessions elsewhere. The Department of Ornithology has had a number of desirable accessions during the year, mostly resulting from the local expeditions of the department. It will be observed from the list elsewhere that many valuable specimens were also obtained by purchase. An important and interesting collection of folk-lore of precious stones was purchased for Higinbotham Hall of Mr. George F. Kunz. Following is a table showing the amount expended on collections and articles purchased during the year for the different departments:

Department of Anthropology,	\$1,272.10
Higinbotham Hall,	1,150.00
Department of Geology,	905.65
Department of Zoology,	301.17
Department of Botany,	5,807.32
Department of Ornithology,	47.89
Total,	<u>\$9,484.13</u>

The amount expended for collections in the Department of Botany represents the price paid for the Bebb collection, \$5,000, and half the amount due on the Gaumer collection, \$650.

EXCHANGES.—Reference is made elsewhere to the system of exchanges adopted by the Museum, and in its proper place will be found a list of the materials received through this medium. The

relations sustained with contemporaneous agencies for an exchange of material are very satisfactory and have been productive of much benefit. The preliminary negotiations in the matter of these exchanges are conducted by the curators of departments, and when ready for conclusion are submitted to the Director for his approval. The cost of carriage is paid in each case by the party receiving the material and, as stated, regular accounts are kept by the Recorder with the persons or institutions with whom exchange relations are established. The catalogues of material available for exchange, heretofore issued, have assisted materially in opening correspondence, and several other institutions have adopted this method of acquainting museums and collectors of their possessions. The number of specimens sent in exchange during the year was 3,548, representing thirty-nine different transactions. The number of specimens received in exchange was 4,226, representing twenty-five transactions.

EXPEDITION AND FIELD WORK.—The expeditions and field work of the Museum have been confined this year to North America, and have all been authorized with special regard to the direct needs of the department in each particular instance, thus carrying out the instructions of the Executive Committee, that staff collections and original research must be upon an outlined system, and confined, as far as possible, to the domestic field. Following is a list of the expeditions of the Museum since the date of the last report :

DATE.	LOCALITY.	COLLECTORS.	MATERIAL.
Nov. 9, 1897, .	Northeast Arkansas, .	S. E. Meek, . . .	Fishes, etc.
Jan. 15, 1898, .	Missouri,	O. C. Farrington, .	Fossils, etc.
Jan. 31, 1898, .	Tampa, Florida, . .	S. E. Meek, . . .	Fishes.
Jan. 28, 1898, .	Oraibi, Arizona, . .	George A. Dorsey and F. B. Melville, .	{ Plaster Casts { Moki Indians.
Mar. 15, 1898, .	Southwest Missouri, .	H. W. Nichols, . .	Lead and Zinc Ores.
May 31, 1898, .	Missi'pi and Arkansas, (North American Forestry), .	C. F. Millspaugh, .	Plants and Woods.
Mar. 22, 1898, .	Bad Lands, S. Dakota,	O. C. Farrington and E. S. Riggs,	
July 12, 1898, .	Olympian Mountains,	D. G. Elliot and C. E. Akeley, . . .	Mammals.
July 15, 1898, .	Northern Michigan, (North American Forestry), .	C. F. Millspaugh, .	Plants and Woods.
June 30, 1898, .	LaCrosse & Elroy, Wis.,	E. B. Chope, . . .	Insects.
July 25, 1898, .	Havana, Illinois, . .	S. E. Meek, . . .	Fishes, etc.
Sept. 9, 1898, .	Mitchell, Indiana, . .	S. E. Meek, . . .	Fishes, etc.

Mr. Dorsey, Curator of the Department of Anthropology, accompanied by Mr. F. B. Melville, visited the province of Tusayan,

Arizona, in December and January. The object of the expedition was to make casts of a number of Hopi Indians, for the purpose of reproduction. Mr. Dorsey, in his report, says: "Although we suffered greatly from the unusually cold weather, and from several mishaps generally incident to a wagon journey in Arizona, the expedition was very successful, and, as a matter of fact, we secured two more figures than we had anticipated. In addition to the casts, I secured a small collection, supplementing the one I made in August last year. This consisted chiefly of garments and paraphernalia necessary for the building of the Hopi groups. At this time I also passed four days in exploration of the ancient Hopi ruin of 'Homolobi, near Winslow. Here we secured over one hundred specimens of most interesting ceramics and a number of stone implements and fetiches." During the month of April, Mr. Dorsey took advantage of the unusual opportunity offered by the presence in Chicago of a band of Esquimaux, brought here by Captain Miner W. Bruce, to whom the Museum is chiefly indebted for its extensive Alaskan collections. Captain Bruce kindly placed these people at the disposition of the Museum, and they came to the building day after day, until in all casts of nine individuals had been completed. These were made under extremely favorable conditions, and the results obtained promise to be entirely satisfactory. In the Department of Botany, Mr. Millspaugh, the Curator, has continued his work upon the collection of North American forest trees, making trips to Southern Illinois, Mississippi, Arkansas, the Upper Peninsula of Michigan, and Northern New York, during which a large amount of material was secured and much valuable data acquired. The most important field work undertaken by the Department of Geology during the year was the equipment of an expedition for the collection of vertebrate fossils in the Bad Lands of South Dakota, Nebraska, and Wyoming. This was intended, chiefly, to begin a collection for the purpose of representing the structure and characteristics of the ancient vertebrates which inhabited this region during Tertiary times. Mr. Farrington, in his report of this expedition, says: "No region in the world is richer in the remains of ancient mammals than that mentioned, and the work of collecting and preserving them before they decay seems of paramount importance. Aside from the intrinsic interest which the structure of these ancient animals possess, it seems hardly less than a duty on the part of the Museum to secure and preserve as far as possible these remains, as often as they are exposed by the hand of Nature. The expedition sent by the Museum this year devoted its attention mainly to collecting mammal remains of the White River

and Loup Fork ages. I was ably assisted in the work of collecting by Mr. E. S. Riggs, and about three months were spent by the party in the field. The work was conducted during the first seven weeks in the Bad Lands of South Dakota, after which the "Corkscrew" beds near Harrison, Nebraska, were visited. The party then explored the escarpments of the Deep River beds near White Sulphur Springs, Montana, and the remainder of the time available was spent in the Hat Creek basin of Wyoming. While the material is as yet too largely in the matrix to be accurately reported upon, the expedition may be characterized as remarkably successful. The amount and quality of the material collected are such as amply to repay for the outlay, and it was clearly demonstrated that the material could be secured by collection in the field far more profitably than by purchase. The quantity of material obtained for a given outlay was larger. The work of collection was directed towards a needed kind of material, and details of scientific value were noted which could not be gained with a purchased collection. Among the specimens secured were a nearly complete skeleton of *Titanotherium*, a large skull, with jaws and thirteen vertebræ, three skulls and many miscellaneous bones of animals of the same genus; two skulls, jaws, and leg bones of *Aceratherium*; a probably complete skeleton of *Pœbrotherium*; a skull of *Protoceras*; twenty-five skulls, some with jaws, and leg bones, of *Leptauchenia*, and about twenty-five skulls each of species of *Eporeodon* and *Oreodon*; a skull, jaws, vertebræ, and leg bones of *Cynodesmus*; skulls and miscellaneous bones of *Hyaenodon*, *Meshippus*, *Hyaenodon*, *Daphænus*, and *Leptomeryx*, and representative bones of three genera of rodents. These specimens will be cleaned and mounted during the winter months, and from them it will soon be possible to make a creditable exhibit, as a beginning of a collection of ancient vertebrates. Besides the main work of the expedition, many auxiliary results of value were gained. From the "Corkscrew" beds of western Nebraska five fine specimens of the remarkable *Dæmonelix*, or "devil's corkscrew," were secured. These specimens have spirals three to eight feet in length, with rhizomes attached. From the Fort Pierre beds of South Dakota a choice collection of the richly-colored amber barite, golden calcite, and chalcedony geodes, which occur in the concretions of these beds, was obtained. About one hundred photographs illustrating geologic and scenic features were taken, and about forty specimens of plants showing the character of the flora of the region were collected. During the stay of the party in South Dakota I visited the principal mining camps in the vicinity of Deadwood, and obtained a representa-



TYPICAL HOPI HOME—ETHNIC GROUP.—FIELD COLUMBIAN MUSEUM.

Cast from life and sculptured by F. B. Melville.

tive series of the ores and country rocks of the Homestake and Gilt Edge mines, and others of that region." During February, Assistant Curator Nichols, of the department of Geology, spent three weeks among the zinc-lead deposits of Southwest Missouri, studying the ores and metallurgy of the region, collecting ores, metallurgical products, and minerals, and taking photographs of the workings, both above and below ground. Besides the ores and metallurgical products collected, exceptional specimens of the fine minerals for which this region is famous were secured. The photographs taken were used to illustrate a lecture upon the region given in the spring course. As a result of this trip, the economic collections have been enriched by a collection of zinc and lead ores and associated rocks from the most important zinc-producing region of the country. A collection illustrating the ore hearth process of lead smelting adds much to the completeness of the metallurgical collection. In January the Curator spent some time in investigating a find of mastodon bones near St. Louis, Mo. A large amount of the remains was found in place, but owing to excessive rains, but few specimens could be collected. During the return trip of the expedition to the Bad Lands, the Omaha Exposition was visited and a number of specimens secured from exhibitors there. Mr. Elliot, the Curator of the Department of Zoology, and his assistant, Mr. C. E. Akeley, were commissioned upon an expedition to the Northwest in July. Under date of September 13, from the Olympian Mountains, Mr. Elliot writes: "The expedition to the Olympian Mountains, which I am at present conducting, has thus far secured five hundred skins of deers, carnivora, and rodents, which collection we hope to increase considerably before our labors are ended. This collection is exceedingly valuable, coming as it does from hitherto unknown localities where no naturalist has ever penetrated. There are probably species new to science among them, but how many cannot be determined until they have been examined and compared with other material. The country in which these have been procured is the roughest and most difficult to traverse that I have ever seen, and my experience in the various mountain ranges of North America has been very extensive. A great portion of the Olympians is absolutely impassable, and we have reached a point beyond which nothing, unless provided with wings, can go, while from our camp we can look over a vast extent of the range totally unknown and unapproachable. A naturalist, therefore, can fully appreciate the value of the material we have secured. Even if already known, specimens coming from such localities are of almost as much

value as if undescribed, and will prove of great assistance in settling questions of geographical distribution and others of equal importance. Snakes and batrachians are not plenty in the range, but we have secured some of both, which I am sure will prove of much interest, and I hope to be able to obtain some of the fishes of this region. All these, whether known or unknown, will be valuable additions to our Museum, where they are entirely unrepresented." It is expected that this expedition will return to Chicago the first of the coming month, and the results of the expedition will undoubtedly appear in the publication series of the Zoological Department. During the year the Assistant Curator of Zoology made a few collections, one in north-eastern Wisconsin, one at Havana, Ill., and a few in the vicinity of Chicago. A small collection was also obtained by the Assistant Curator while attending the National Fishery Congress at Tampa, Florida. The collections from Wisconsin and Havana, Ill., are being used in making exchanges. One set has been sent to Stanford University; other sets are being prepared for the British Museum, the United States National Museum, and the Museum of Comparative Zoology, Cambridge. During the year, Mr. Chope, Assistant in the Department of Zoology, has been very energetic in collecting insects in the vicinity of Chicago. He visited La Crosse and Juneau counties, Wisconsin, in the same pursuit, procuring over 1,600 specimens. He has collected many cocoons of moths and butterflies in the vicinity of Chicago, from which 148 specimens have been hatched in the laboratory of the department, thus obtaining more perfect examples than could be secured in any other manner. Several species have been reared from the egg. Those of one brood have been killed at different times, thus securing a very complete series from the egg to the imago.

INSTALLATION, REARRANGEMENT, AND PERMANENT IMPROVEMENTS.—

The permanent improvements within and about the Museum building during the past year have been quite extensive, and have in a measure been brought about by the demands for greater convenience and better facilities for the prosecution of the daily work of the institution. New offices have been constructed in the east and west courts respectively for the Curators of Anthropology and of Ornithology, while the offices and laboratories of the Departments of Botany and of Zoology have practically been reconstructed, largely extended, and rearranged in the interior. A new studio, complete and modern in every respect, has been constructed in the third gallery of the east court for the section of Photography. A poison-

ing-room and two new storerooms, equipped with storage racks and trays, have been built for the Department of Anthropology. A shipping-room has been constructed in the west court. In the Department of Geology the laboratories and workrooms have been rearranged, and the two rooms formerly used as laboratory and library are now divided into laboratory, library, storeroom, and workroom. A brick addition to the boiler-house has been erected, and an assaying-room for the use of economic geology has been fitted with furnaces connected with the smoke-stack in the boiler-house. Besides all of the above additions and improvements, making great demands upon the mechanical force of the institution, the usual and routine repairs, and the attention required by the roof and the exterior of the building, have been kept up. In the Department of Anthropology the east court has been entirely reinstalled, all the material not relating to Archaeology having been transferred to appropriate locations. The court is now entirely devoted to American Archæology, the north alcoves containing North American Archæology, the central portion Mexican and Central American Archæology, and the south alcoves South American Archæology. Every case of the court has been reinstalled and rearranged, and the material has been entirely reclassified. In the north court twelve cases have been added within the present year. Six of the new cases are devoted to Etruscan Archæology, the contents of each tomb being installed as a unit. Hall No. 7, formerly devoted to Chinese Ethnology, has been used for the last six months as a workroom for casting, molding, and sculpturing. The Chinese Joss-House material which heretofore occupied the room, no longer being regarded as worthy of exhibition, has been mostly destroyed, that of any value whatever being boxed and stored. The contents of Halls 16 and 17 have been removed, together with all the cases. Both halls have been renovated, and now present a fresh and attractive appearance. Hall No. 16 has been recased with new standard cases, and is devoted to South American Ethnology, that portion which relates to British Guiana and Venezuela having all been installed. For the first time there is used in this hall a portable screen which divides the case into two equal halves, and does away with the cumbrous and unsightly fixed partition. Hall No. 17 has also been recased with new standard cases and is to be devoted to the Ethnology of the Southwest, chiefly that of the Hopi. A large group, showing the characteristic features of a Hopi dwelling, the several inmates being engaged in domestic pursuits, has been completed. A young man throwing a boomerang has also been installed, and figures of a bride and two

groups of Katcina dancers have been completed. Halls Nos. 10 and 11 are being dismantled and the old ill-assortment of cases will be replaced with new standard cases. Plans have already been made for a complete reinstallation of these rooms, and casts have been made for nine figures, which will be arranged in four groups. For the first time in the history of this department, the work of the preservation of specimens from the ravages of insects is in a condition that seems to guarantee the protection of the material, which has already noticeably suffered from inattention. In the Department of Geology some slight changes have been made to provide for the erection of the model of the moon in Alcove 103 of the west court. The position of the glacial slabs has been somewhat changed, and the smaller specimens formerly contained in the alcove have been removed to Halls Nos. 36 and 59. The cases in Hall No. 35, containing the collection of vertebrate fossils have been replaced by upright cases brought from Hall No. 7. This was deemed desirable because the old cases were too small and so loosely built as to give little protection from dust. With the new installation a much better light is secured, and specimens will no longer suffer injury from dust. In the same hall a collection of about 500 specimens, illustrating the Niagara fauna of Chicago and vicinity, has been installed in two floor cases brought from the east court. The collection has hitherto been in storage for lack of case room. It is accompanied by a collection illustrating methods of petrification, prepared specially for instruction of the pupils of the public schools. The cases used were remodeled from their former shape, and, besides other changes, were fitted with brackets made after a design prepared in the Museum, which permits adjustment of the shelf to any slope. In Hall No. 62, devoted to the meteorite collection, the old wall cases have been replaced by some of a more desirable pattern brought from Hall No. 7. The meteorite accessions, including the Long Island meteorite, have been installed in these, and the change, together with some other rearrangements, has resulted in a marked improvement in the appearance of the hall. At the same time a better protection from dust has been secured for the specimens. Hall No. 77, devoted to the display of fictile materials, has been entirely rearranged. The pyramids of brick, sewer pipe, etc., which formerly occupied much of the space, have been replaced by more valuable material. A series of 1,200 briquettes, made from clays of as many different localities of the United States and Canada, illustrates the adaptation of different kinds of clay to brick making. A second collection shows the composition of clays and the effect of impurities upon their value. Another illustrates fine clays and



METEORITE HALL—LOOKING NORTH—FIELD COLUMBIAN MUSEUM



METEORITE HALL—LOOKING SOUTH—FIELD COLUMBIAN MUSEUM.

their uses. All these make up an unusually complete and instructive exhibit. A collection illustrating the varieties, origin, and composition of soils has also been prepared and installed here, the material having been largely gathered by the Assistant Curator. This was prepared chiefly in response to requests from teachers in the public schools who wished to use it for purposes of instruction. Other collections shown in this hall illustrate the origin and methods of manufacture of mineral paints, of varieties of sand and cement, of varieties of pressed brick, and of varieties of brick clays and fire clays. In Hall No. 79 the collection of zinc ores and products has been rearranged to include the material obtained by the Assistant Curator in Joplin and vicinity. A rearrangement of the gold, silver, and lead ores is now in progress in Hall No. 72. This has been made necessary in order to provide for the exhibition of a large amount of material now in storage, and to improve the classification of the collections. A series of about fifty large framed photographs, illustrating the methods of mining and metallurgy in use in Ecuador and Chile, has been placed upon the walls in this hall. The phosphates received from the Nashville Exposition have been installed with the collection previously exhibited in Hall No. 78, increasing its size and value. Halls Nos. 74 and 75, occupied by the departmental library and laboratory, have undergone extensive alterations which add much to their appearance and increase the working facilities of the department. In the library the books have been made to occupy but half the space they formerly filled. The area so gained has been partitioned off and fitted with storage trays and tables for the use of the assistants in vertebrate paleontology. The laboratory, likewise, has been divided by a partition into two rooms, one of which continues to serve as the laboratory. It has been provided with water and air baths, sink and table, and is piped for gas and water. A Becker chemical balance, sensitive to one-tenth of a milligram, and a set of platinum dishes have been provided. The laboratory is now, therefore, fairly well equipped with facilities for chemical work which have long been needed, and it is hoped in the coming year to carry on a number of investigations in this line. The three Goyard assay furnaces which were formerly kept in the laboratory have been removed to the boiler-house and set up in a room specially built for the purpose. These will give facilities for making assays, for which there is frequent demand. The transparencies, enlarged from cuts in *De Re Metallica*, which were formerly exhibited in the laboratory, are now shown in classified order in Halls Nos. 72 and 79. In the Herbarium of the Department of Botany very extensive

improvements have been made, and every facility given for carrying out the plans outlined by the Curator of that department. Ten large air-tight tin cases have been added, in which duplicates may be kept secure from dust in an atmosphere of carbon bi-sulphide. These cases are divided into fifteen compartments, and contain at the present the large duplicate collection of Yucatan plants just acquired, which are being rapidly arranged for distribution in exchange with several institutions in this country and Europe. In his report Mr. Millspaugh says: "In these cases the plants are arranged on sheets of light manilla paper, plainly numbered, and the fascicle of each number placed in a folded sheet used as a genus cover. These are arranged consecutively, and from them a plant of any special number, or a number of plants of any special number, century, or set, can be quickly assembled for distribution at any time, meanwhile being thoroughly protected from insect depredations. Eighteen similar tin cases, having chiefly racks and tin trays instead of compartments, have been placed in the herbarium for the storage of seeds, fruits, fungi, and other material which needs protection from pests. These, like the cases previously mentioned, can be bi-sulphided at any time. The capacity for storage of material in a manner convenient for quick and ready reference has been considerably augmented by the original cases that contain the Bebb herbarium, fourteen in all." With reference to the methods of the herbarium, the Curator, in a most interesting report, says: "Upon the arrival of a package of plants destined for the herbarium, an accession card is filled out and sent to the Recorder of the Museum. This card states from whom the package was received, how it was acquired by the Museum, the collector's name, the date of the collection, locality, and number of specimens contained. The plants are then poisoned and laid out upon mounting sheets, to which labels are immediately attached. These sheets are placed in boxes in such a manner that the plants cannot possibly shift or mix, and are turned over for mounting. After mounting, each sheet is impressed with the seal of the herbarium, which includes a space for the consecutive catalogue number of the department. The collection is then arranged in the order of the collector's numbers, each species is entered in the continuous inventory book or department catalogue, and the catalogue number of each sheet is written in the seal, after which the sheets are distributed to their proper genera or orders in the herbarium. Thus a complete record of all species, localities, collectors, and collections is always ready at hand for reference, but any collection can be reassembled for reference as a whole by monograph-

ists and students in Ecology. In case of the records of an herbarium as a whole, like that of a Schott or Bebb, a special seal is used, stating 'Herb. Schott' or 'Herb. Bebb,' in addition to the words 'Field Col. Mus.,' in order that the sheets may ever be credited to the previous botanist through whose hands they have passed. These acquired herbaria are not distributed in the herbarium until each sheet has been catalogued, numbered, and credited to the original collector. In addition to the inventory books, a running card catalogue of localities and collectors keeps pace with the accessions of collections and the reference data are thus made complete. Although this entails a large amount of clerical work, and draws upon the time of the Curator, yet the result in usefulness, it is felt, will amply repay in the end. This method also extends to and includes the economic collections upon the walls and in the cases of the department. So complete is the record that, should the whole collection be taken from the cases and thrown together in chaos, a new incumbent could readily reinstall the whole without loss of time or confusion of records or labels. Within the herbarium another method has been adopted, destined to save a vast amount of time to those who consult the collections, each large biological division of the world being represented by a different colored genus cover; temperate American specimens being in manilla covers, tropic and sub-tropic American in orange, European in green, Asiatic in red, African in blue, and Oceanian in yellow." In the Department of Ornithology, Hall No. 27 has undergone needed alterations in reducing the depth of the cases, thus bringing the individual specimens closer to the glass and rendering them more easy of inspection and the labels more readily consulted. In the Department of Zoology, the contents of Halls Nos. 19 and 20 have been rearranged in the cases, which were new one year before, and by constructing partitions with shelf brackets and including more specimens in the same case, room has been provided for the installation of new mounted specimens. In the west court two great groups have been installed in large mahogany plate-glass cases—the Oryx and Waller's Gazelles. As stated, the offices, work-room and laboratories of the department in the third gallery of the south court have been enlarged and entirely refitted. A large number of improved storage cans has been provided for the laboratories, and immense racks for alcoholic specimens have been constructed in one of the new rooms. The suite of apartments thus provided and equipped furnishes the best example of convenience and economy of time in the conduct of work for which it is intended. During the past year nearly all the collections in the

Department of Zoology have been carefully gone over, and the large collection of shells and the contents of the hall of fishes have been entirely reinstalled. In the Osteological Hall two new cases have been provided, and all of the material rearranged to accommodate the specimens secured during the year. In this division, with new appliances provided for the use of the Osteologist at the shop, corner of 56th street and Jefferson avenue, considerable work has been done furnishing new skeletons for exhibition, while still more are so far advanced that they will soon be ready for the cases.

PHOTOGRAPHY AND ILLUSTRATIONS.—This division moved into its commodious and very complete studio and storage and work rooms in the third gallery of the east court during the year and is performing very creditably its share of the work of the institution. While both the Curator of Botany, who has charge of this department, and the operator have been away upon expeditions a great deal of the time, yet the work has been in a measure constant and much more comprehensive than any previous years, owing to increased facilities and conveniences. The following table shows the actual results, only, of a large number of photographic operations, many of which require hours of preparation :

Department.	Negatives.	Prints.	Lantern Slides.
Anthropology,	79	224	112
Botany,	47	208	113
Geology,	145	47	147
Zoology,	46	152	34
Expeditions,	147	...	...
	464	631	406

Enlargements, 101. The operator has also stored in new cases and catalogued 3,000 negatives.

PRINTING.—The printing-office becomes more essential and a great saver of time and money every year. Considerable new type and several new appliances have been added to the material of this section, and the character, no less than the amount, of work executed is gratifying in the extreme. During the year the following work has been performed by this small, though important, section :

	Labels.	Other Impressions.
Anthropology,	2,270	21,980
Botany,	308	11,350
Geology,	3,289	.....
Zoology,	623	23,100
Ornithology,	356	350
Director's office, . . . . .	.....	29,541
Higinbotham Hall,	155	.....
Library, . . . . .	.....	7,700



GROUP OF ORYX.—FIELD COLUMBIAN MUSEUM.

• (Dimensions of Case, 12x12x10.)

• C. E. Akeley, Taxidermist.

In addition to the above, the mailing list has been corrected as required by the issuing of the different publications, and 500 copies of an Herbarium pamphlet have been printed.

TAXIDERMY.—Notwithstanding his three months' absence on expeditions in the Northwest, Mr. Akeley, the chief taxidermist, has created two more striking groups from the material obtained on the African expedition—Waller's Gazelles and the oryx group. The same appreciation of the high purpose of his work, the same skillful blending of nature and of art, the same conspicuous care in detail, distinguish these groups as they marked the other creations of which he has been the author. The facilities provided for this important and most valuable division of the Museum are entirely inadequate, not only as to space in which this work must be performed, but as to the conveniences and appurtenances, and the skilled assistance available. The Curator of the Department of Zoology, to whom the taxidermist is assigned, has submitted an outline for the expansion of this section and for the provision of such aids and agencies as will enable the force so fortunately at command of the Museum to take advantage of the unusual conditions and of a large amount of material of exceptional value and interest, and to produce in greater quantity and in quicker succession the masterpieces in the representation of animal life, of which Mr. Akeley is so highly competent. I shall ask for these recommendations of the Curator of the Department of Zoology the earliest consideration of the Executive Committee.

GUARDS AND FIRE PROTECTION.—By instruction of the Executive Committee, the guard of the Museum was increased one member during the year, to permit the execution of the rule of the committee granting to each member of this branch of Museum service an annual two weeks' vacation, with pay. Not one complaint of inattention or incivility to the public on the part of a guard has reached the Director during the year. I wish to call special attention to the excellent discipline, general deportment, and soldierly and genteel appearance of the guard of the Museum, to whom the safety of the building, the security of its contents, and the convenience of the public are due in a large measure. The appliances of the fire department have been increased by the exchange of the two-gallon extinguishers for new three-gallon machines. The equipment at present consists of a Champion chemical engine with a capacity of 55 gallons, and 300

feet of hose which will reach every part of the building. A hose-cart is located in each court of the main building, and of six hose-reels, one is placed in the east annex, one in the west annex, and four upon the gallery floor. In each court 2,500 feet of hose are distributed on the various hose-reels and racks, together with ten $\frac{3}{4}$ -inch nozzles; three 1-inch nozzles; four 26-foot fire-ladders; seven pike-poles of various lengths; twenty-six fire-axes, and one hundred and forty-five buckets. Eight fire-hydrants are located within the main building, and twelve more just outside of the building. The water pressure has been increased by connection with the park system instead of the city water main. The present system has a hydrant pressure of about forty pounds, and gives a fair hydrant stream on the gallery floor, but in case of fire higher up, the chemical engine alone could be relied on. An understanding has been reached between the Fire Department of the Museum and the City Fire Department that, in case of fire, the Museum hose would be connected by the first fire engine company, which would save delay in getting water higher than the gallery floor. The apparatus for local fire alarm has been improved by putting in an automatic mercurial fire alarm in the north, east, and south balcony offices, auxiliary fire alarm boxes in the east and south balcony offices, and a fire alarm box in the boiler-house. The daily inspection through the building has been faithfully performed during the year. The Chief of the Chicago Fire Department, at his annual inspection, reported the building in good order. In fact, he had no complaint to make. The regular hours of inspection for danger from fire through the basement are 7 and 11 o'clock A. M., 3:30 and 9 o'clock P. M.; the main dome at 4:30 P. M., and the vaults at 4 P. M. The balcony offices and the roof are inspected every Saturday. The guards are drilled in fire drill, and the janitors have instructions in case of fire. The members of the fire department continue to look after all the electric work of the building, trimming forty arc lamps daily, keeping them in repair, and also keeping in repair the burglar, telephone, and watch systems of the building.

ATTENDANCE.—The total attendance of the year was 3,963 more than in the year previous. The increase in paid attendance was 189, and the increase in the attendance of teachers was 45. More persons visited the Museum on a single day than on any day since October 4, 1894, the number being 6,220. An analysis of the attendance during the entire year appears in another portion of this report.

The following is a gratifying list of the school classes (thirty pupils or more) that visited the Museum during the year just closed :

Schools. Chicago—	Teachers.	Pupils.
Hyde Park High,	1	101
Hyde Park High,	1	85
North Division High,	1	80
Normal,	2	63
Normal,	2	67
Normal,	2	67
Normal,	1	65
Normal,	2	59
Normal,	4	306
Sherwood,	2	50
Sherwood,	1	38
D. S. Wentworth,	2	74
D. S. Wentworth,	2	51
Mark Sheridan,	1	42
Fernwood,	4	79
Kershaw,	1	36
Graham,	2	71
Froebel,	5	110
La Grange Public School,	1	39
Valparaiso (Ind.) Normal School,	—	50

The following comparison between the daily attendance in the year ending Sept. 30, 1897, and the year ending Sept. 30, 1898, will be interesting:

	Increase.	Decrease.
Total attendance,	3,963	...
Paid attendance,	189	...
Attendance of school children on pay days, . . . . .	...	1,680
Attendance of students, . . . . .	...	573
Attendance of teachers,	45	...
Attendance of members,	91	...
Average daily attendance, 1897,		603
Average daily attendance, 1898,		614

ACKNOWLEDGMENTS.—It is proper to acknowledge the generosity and courtesy of the Chicago & Northwestern Railroad, the Great Northern Railroad, the Northern Pacific Railway, the Canadian Pacific Railroad, the Atchison, Topeka & Santa Fe Railroad, the Illinois Central Railroad, and the Chicago, Burlington & Quincy Railroad in transporting members of the Museum staff and material obtained on

expeditions. Also of the courtesy of Mr. H. J. Stadelman, of Marshall Field & Co.'s New York office, and of the foreign office of Marshall Field & Co. in this city, in clearing consignments at the Custom House.

During the summer the Curator of Anthropology, the Curator of Geology, and the Director visited the Museums of Europe. This opportunity is taken of acknowledging the attentions received at the hands of the officers of the institutions visited.

Herewith are submitted financial statements, analysis of attendance, lists of accessions, names of members, etc., etc.

FREDERICK J. V. SKIFF,

Director.



HERBARIUM—FIELD COLUMBIAN MUSEUM.

FINANCIAL STATEMENT.

RECEIPTS AND DISBURSEMENTS

During the Year Ending September 30, 1898.

RECEIPTS.

Cash in Treasurer's hands, Sept. 30, 1897,	\$ 5,211.72
Petty cash on hand, Sept. 30, 1897,	739.95
Dues of Members—	
Corporate,	\$ 195.00
Annual,	4,150.00
South Park Commissioners,	15,000.00
Chicago City R. R. Co.,	2,250.00
Joseph N. Field,	12,500.00
Lambert Tree,	5,000.00
J. W. Doane,	5,000.00
H. N. Higinbotham—Folk-lore Collection,	1,000.00
Sundry receipts,	118.52
Interest on Investments,	36,405.25
Interest on Bank Balance,	109.91
Admissions,	5,075.60
Check Rooms,	1,122.30
Sale of Guides,	328.50
Sale of Securities,	22,927.40
	<u>\$117,134.15</u>

DISBURSEMENTS.

Salaries,	\$40,210.04
Guard Service,	11,147.69
Janitor Service,	6,548.22
Fire Protection—	
Additions to Equipment,	\$ 100.00
Wages of Firemen,	2,760.00
Uniforms and Sundries,	68.88
	2,928.88
Heat and Light—	
Additions to Plant,	152.49
Wages of Engineer and Assistants,	2,759.74
Fuel,	3,372.98
Supplies, etc.,	887.44
	7,172.65
<i>Carried forward,</i>	<u>\$68,007.48</u>

<i>Brought forward,</i>		\$68,007.48
Repairs and Alterations—		
Wages of Carpenters, Painters and Roofers,	9,194.06	
Materials used—Paints, Oils, Hardware,		
Glass, Lumber and Plaster,	2,348.26	11,542.32
Furniture and Fixtures—		
Cases and Bases,	7,544.25	
Building Fixtures,	1,625.80	
Sundries,	115.50	9,285.55
The Library—		
Books and Periodicals Purchased,	274.02	
Binding,	300.50	
Sundries,	209.57	784.09
Sections of Printing and Photography,		522.96
Collections and Articles Purchased,		9,484.13
Installation Expenses,		2,686.94
General Expense Account—		
Freight, Expressage and Teaming,	1,942.42	
Stationery, Postage, Telegrams and Tele-		
phone,	875.59	
Publications,	1,996.60	
Expeditions,	3,287.65	
Sundries,	1,532.68	9,635.03
		\$111,948.50
In Treasurer's hands, Sept. 30, 1898,	4,445.70	
Petty Cash on hand, Sept. 30, 1898,	739.95	5,185.65
		\$117,134.15

ATTENDANCE AND RECEIPTS FOR THE YEAR ENDING SEPT. 30, 1898.

ATTENDANCE.

Total Attendance,		224,246
Paid Attendance—		
Adults,	19,892	
Children,	1,026	20,918
Free Admission on pay days—		
School Children,	5,272	
Students,	856	
Teachers,	417	
Members—Corporate,	41	
Annual,	620	
Life,	22	
Officers' Family,	83	
Special,	16	
Press,	13	7,340
Admission on Free Days—		
Saturdays,		57,309
Sundays,		138,679
Highest Attendance on any day (August 28, 1898),	6,220	
Lowest " " " (February 1, 1898),	6	
Highest Paid " " " (July 4, 1898),	460	
Average Daily Admissions (365 days),	614	
Average Paid Admissions (261 days),	80	

RECEIPTS.

Guides sold—1,314 at 25 cents,	\$ 328.50
Articles checked—22,446 at 5 cents,	1,122.30
Admissions,	5,075.60
	<u>\$6,526.40</u>

ACCESSIONS.

FROM OCTOBER 1, 1897 TO SEPTEMBER 30, 1898.

DEPARTMENT OF ANTHROPOLOGY.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AYER, EDWARD E., Chicago, Ill.

- 13 specimens of feather-work of California Indians, head-dresses, etc.—San Francisco.
- 2 etched and carved ivory pipes—Alaska.
- 2 etched ivory pipes—Alaska.
- 3 etched ivory bow drills—Alaska.
- 1 etched scraper jade-blade—Alaska.
- 1 large horn spoon (carved)—Alaska.
- 1 small horn spoon (carved)—Alaska.

BALDWIN, EVELYN B., Centralia, Ill.

- Bundle of reed torches, cobs, etc.—Mammoth Cave, Ky.
- 1 kayak.
- 1 double paddle.
- 3 harpoons.
- 1 kayak seat.
- 1 skin float.
- 1 reindeer skin, head and antlers.

BRUCE, M. W., Chicago, Ill.

- 5 pieces of Eskimo clothing—Alaska (exchange).

COLE, MRS. W. H., Chicago, Ill.

- Flowers of feathers and beetles' wings—Brazil, S. A.
- Carved open-work ivory vase.
- 1 royal Copenhagen vase, 8 inches high, decorated with human figure and head of cherub (loan).

CHERRIE, W. S.

- 1 calvarium, Boabos-Mobain tribe—Africa.

DEPARTMENT OF ETHNOLOGY, World's Columbian Exposition.

Collected by D. Scott Moncrieff :

- 7 skeletons, fragments, etc.—Dalles, Ore.

Collected by George A. Dorsey :

- Collection of skulls—Chancay, Peru.
- Collection of skulls—Sierra Gorda, Perú.

Collected by J. M. McLean :

- Crania (Blackfoot)—Alberta, Canada.

Collected by Dr. C. L. Metz :

- Skeletons and skulls—Miami Valley.

Collected by Lieut. R. E. Peary :

- Collection of skulls and bones—Greenland.

Collected by Lieut. W. E. Safford :

- Collection of Aymara bones from Chulpa—Oruro, Bolivia.

Collected by Lieut. G. P. Scriven :

- Skulls—Costa Rica.

Collected by H. I. Smith :

- Skeletons—Warren County, Ohio.

Collected by F. Starr :

Collection of pottery, baskets, rattles, arrows, bows, blow-guns, darts, spoons, etc.—Cherokee Indians, North Carolina.

Collected by Ernest Volk :

Skeletons, etc.—Trenton, N. J.

FIELD COLUMBIAN MUSEUM.

Collected by J. A. Burt, for Department of Anthropology :

Fragments of skeletons from an Indian mound—Sag Bridge, Ill.

Collected by George A. Dorsey :

1 skull (cleft palate)—San Nicolas Island, California.

2 skeletons (Blackfoot)—Blood Reserve, Canada.

Collection of ethnological material—Blackfoot Indians.

2 skeletons—Bonner's Ferry, Idaho.

Collection of ethnological material—Flathead Indians, Flathead Reserve, Montana.

Collection of ethnographical material—Kootenay Indians, British Columbia and Idaho.

Collection of ethnographical and archeological material from the Haidas—Queen Charlotte Islands, B. C.

Collection of ethnological and archeological material from the Moki Reservation.

Collection of ethnological and archeological material from Zuni, Pueblo, New Mexico.

1 basket and cover, 1 carved image—from grave at New Tongass, Alaska.

1 box, pipe, birchskin shirt (?) labret, 2 cedar bark collars, 2 pouches—from grave near Old Tongass, Alaska.

1 rattle, used in dog-eating and slave-killing ceremonies at China Hat, British Columbia.

1 stone celt, 1 arrow point (broken), 1 spear point, 1 slate implement—from ancient grave near Cedar Hill, Victoria, B. C.

Collection from Hagwilgait, near Hazelton, B. C.

Collection from the Tsimshians—British Columbia.

Collection of skeletons, skulls, etc.—from Hill Top Cemetery on Two Medicine Lodge River, Blackfoot Reserve, Montana.

Collection of Hopi ethnographic material—Oraibi, Arizona.

Collection of Haida skulls and skeletons—Queen Charlotte Islands British Columbia.

Collection of ancient pottery, etc.—from ruins of Homolobi, Arizona.

1 skeleton of Swede, aged 27.

Skeletons of negroes.

1 cadaver, Chinaman.

Brain and skeleton of Eskimo girl.

Skeletons of whites—Chicago Medical Colleges.

Collected by S. C. Simms :

1 barrel of tiles from Providential Tile Works—Trenton, N. J.

Purchases :

19 crania, *Chinook*—The Dalles, Oregon (purchased from D. M. Averill, Portland, Oregon).

4 glass jars with covers, 1 earthen cinerary jar, 1 circular lead box, 1 long bronze urn—Rome (purchased in Rome, Italy, through Edward E. Ayer).

Flint hoe, fifteen inches long, five inches widest part (purchased from Richard M. Boren, Pulaski, Ill.).

Ethnographical specimens—Alaska and Siberia (purchased from Miner W. Bruce).

Collection of bones, pottery, etc.—Wisconsin (purchased from A. E. Chase, Oshkosh, Wis.).

5 skeletons, *Sanitch*—Vancouver Island, B. C. (purchased from James Deans, Victoria, B. C.).

1 calvarium—New Caledonia (purchased from Otto Finsch, Museum Umlauff, Hamburg).

Purchases:

- 1 birch-bark canoe (purchased from Richard Fry, Bonner's Ferry, Idaho).
- Collection of skulls—Peru (purchased from Capt. T. Harris, Panama, Colombia).
- Photographs of individuals and Hopi Indians—Tusayan, Arizona (purchased from G. Wharton James, Pasadena, California).
- 1 stone serpent, *Tezcoco*—Valley of Mexico (purchased from E. O. Matthews, Mexico, City of Mexico).
- Flint arrow, spear points and fragments—Great Lakes (purchased from Dr. A. J. Mears, 175 Dearborn street, Chicago, Ill.).
- Collection of skulls—Arkansas and Colorado (purchased from C. W. Riggs, World's Columbian Exposition).
- Ethnographical collection from the South Sea Islands, Africa (purchased from William T. Shepherd, Boston, Mass.).
- 18 copper implements, 6 stone implements—Wisconsin (purchased from Earl Westcott, 230 Thirty-seventh street, Chicago, Ill.).
- 2 skeletons, 5 skulls, sacred pipe outfit and buffalo skull used in sundance (Blackfoot), 14 Blackfoot skulls—Blood and N. Piegan Reserves, (purchased from R. N. Wilson, McLeod, Alberta, Canada).
- Collection of ethnological material from Ovimbundu, Africa (purchased from T. W. Woodside, Freeport, Ill.).
- 1 skull (purchased from Wyman Bros., Chicago, Ill.).
- MOOREHEAD, W. K., Columbus, Ohio.
- 4 skulls, 2 skeletons, etc.—New Mexico.
- RYERSON, M. A., Chicago, Ill.
- 250 pieces of fabrics, velvets, brocades—Florence, Italy.
- THOMPSON, E. H., Yucatan, Merida.
- 2 skulls—Chichen Itza.
- WHEELER, EDMUND, MEXICO, Oswego County, N. Y.
- Spinning wheel.
- YOUNG, JOE A., Bellevue, Iowa.
- Photograph of large stone spear head, $9\frac{1}{4}$ inches long, $5\frac{1}{8}$ inches wide.

DEPARTMENT OF BOTANY.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

- AYER, EDWARD E., Chicago, Ill.
- 1 section of treated wood—Texas.
- BOTANIC GARDENS, Grenada, British West Indies.
- 2 packets of fruits.
- BOUTLOU, REV. A., Fairmont, W. Va.
- 1 herbarium specimen—W. Va.
- CORNELL UNIVERSITY, Ithaca, N. Y.
- 42 herbarium specimens—Nugusuak Peninsula (exchange).
- FIELD COLUMBIAN MUSEUM.
- Collected by O. C. Farrington, for Department of Botany:
- 4 herbarium specimens—South Dakota.
- 17 herbarium specimens—Bad Lands, S. Dak.
- Collected by C. A. Lockwood, for Department of Botany:
- 20 herbarium specimens—South Dakota.
- Collected by C. F. Millsbaugh, for Department of Botany:
- 152 herbarium specimens—Mackinac Island, Mich.
- 6 herbarium specimens—Lake Superior Region.
- 6 wood specimens—Lake Superior Region.
- 1 bark specimen—Lake Superior Region.
- 1 box of woods—Michigan.



SECTION IN GALLERY OF ECONOMIC BOTANY—BRITISH INDIA—FIELD COLUMBIAN MUSEUM.

Purchases:

- 204 herbarium specimens—Lower California (purchased from A. W. Anthony, Portland, Ore.).
- Complete herbarium of M. S. Bebb, Rockford, Ill. (purchased from the Bebb Estate, Rockford, Ill.).
- 3 cases of plants and fruits—Yucatan (purchased from George F. Gaumer, Izamal, Yucatan).
- 130 herbarium specimens—N. W. Mexico (purchased from Gray herbarium, Harvard University, Cambridge, Mass.).
- 864 herbarium specimens—Durango, Mexico, and vicinity (purchased from Dr. Edward Palmer, Washington, D. C.).
- 153 herbarium specimens—Mexico (purchased from C. G. Pringle, Charlotte, Va.).
- 373 herbarium specimens—Africa (purchased from Prof. Karl Schumann, Berlin Hof. Museum, Berlin, Germany).
- GEORGIA RAILWAY CO., Augusta, Ga.
 - 2 miniature bales of cotton.
 - 1 box of South Carolina tea.
- GRAY HERBARIUM, Harvard University, Cambridge, Mass.
 - 1 type of species (loaned for study).
 - 605 herbarium specimens (exchange).
- HELLER, A. A., Minneapolis, Minn.
 - 155 herbarium specimens—Texas (exchange).
 - 28 herbarium specimens—New Mexico (exchange).
 - 96 herbarium specimens—Sandwich Islands (exchange).
- HILL, E. J., Englewood, Ill.
 - 13 herbarium specimens, typical crategi and Hill's Oak—Chicago Basin.
- KOENIG BOTANICAL MUSEUM, Berlin, Germany.
 - 783 herbarium specimens—Argentine (exchange).
- LANSING, O. E., Jr., Chicago, Ill.
 - 90 herbarium specimens—Lake Michigan Basin.
- MACKINTOSH, LAUGHLIN, 5522 Laflin street, Chicago, Ill.
 - 2 cakes of brick spawn—Chicago, Ill.
 - 1 box of flake spawn—Chicago, Ill.
 - 12 button mushrooms—Chicago, Ill.
 - 2 fine ripe mushrooms—Chicago, Ill.
- MILLSPAUGH, DR. C. F., Field Columbian Museum.
 - 21 lithographs of plants (in color).
 - 739 mounted plants from his herbarium (exchange).
 - 479 mounted plants from his herbarium (exchange).
- NORTHWESTERN UNIVERSITY, Evanston, Ill.
 - 19 herbarium specimens—North Greenland (exchange).
 - 9 herbarium specimens—Spitzenbergen (exchange).
- PETFORD, C. E., 1243 Adams street, Chicago, Ill.
 - 3 economic specimens of cycas circinnate—Trinidad.
 - 31 economic plant products (exchange).
- POLLOCK, W. M., Morgantown, W. Va.
 - 100 herbarium specimens—West Virginia (exchange).
- SHEHAN, THOMAS, Clayton, Miss.
 - 1 twisted vine—Clayton, Miss.
- SHOTTER, S. P. & CO., Savannah, Ga.
 - 21 economic products of pine—Georgia.
- UNITED STATES NATIONAL MUSEUM, Washington, D. C.
 - 127 herbarium specimens—Various localities (exchange).

DEPARTMENT OF GEOLOGY.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ALMY, JOHN D., Villa Corona, Durango, Mexico.

8 specimens of crystals of unknown nature, probably a new mineral species.

ATCHISON, TOPEKA & SANTA FE R. R., Chicago.

4 specimens of waxy yellow Calcite.

2 specimens of very coarse Horneblende granite.

1 specimen of ferruginous sandstone.

1 specimen of white sandstone.

AYER, EDWARD E., Chicago.

2 specimens of copper ore from Leviathan mine, near Flagstaff, Ariz.

BALDWIN, EVELYN B., Centralia, Ill.

1 specimen of gypsum—Mammoth Cave.

44 specimens of stalactites and 7 specimens of gypsum incrustations—Wyandotte Cave.

2 large specimens of stalactites—Marengo Cave.

BALL, SYDNEY H., Oak Park, Ill.

Bones of Oreodon, Meshippus and other Tertiary vertebrates (loan).

BARBOUR, PROF. E. H., Lincoln, Neb.

6 specimens of Chalcedony geodes.

2 specimens of Amber Barite.

1 lot of small Barite crystals.

BRESKE, F., 273 Stark street, Portland, Ore.

5 specimens of zinc ore, gangue and country rock—Venus mine, Oregon.

1 specimen of copper ore—May Day mine, Oregon.

BRUCE, CLARK, Chicago.

1 specimen of tetrahedrite—Batcheller mine, Ouray, Col.

1 specimen of gold ore—Treadwell mine, Alaska.

1 specimen of gold ore—Rio Grande County, Col.

3 specimens of silver-lead ore—Silver City, Ark.

CASE SCHOOL OF APPLIED SCIENCE, Cleveland, Ohio.

24 specimens of Devonian fossils (exchange).

19 specimens of minerals (exchange).

DENNISON, GEORGE W., 5646 Jefferson Ave., Chicago.

1 specimen of Blende in chert—Ashgrove, Mo.

1 specimen of Blende with calamine—Ashgrove, Mo.

1 specimen of Marcasite on Galena—Carterville, Mo.

1 specimen (in two pieces) of Brachiopod in chert—Webb City, Mo.

DOHMEN, U. A., Field Columbian Museum.

1 specimen of native copper with Calcite—Arizona.

8 specimens of copper, gold and silver-lead ores—Colorado and vicinity.

4 specimens of fossils.

4 specimens of minerals.

1 specimen of mercury ore.

DYCHE, MRS. E. F., 2216 Prairie Ave., Chicago.

67 specimens of ores and minerals—San Juan, Colorado, and other localities.

ELLIS, J. W., Maquoketa, Iowa.

11 specimens of fossils—Maquoketa Shale (exchange).

FIELD COLUMBIAN MUSEUM.

Collected by George A. Dorsey :

3 specimens of Analcite—Queen Charlotte Islands.

Collected by O. C. Farrington :

3 specimens of rocks of White River beds.

4 specimens of rocks of dike and veins—Bad Lands, S. D.

3 specimens of mammal bones.

30 specimens of mastodon bones.

Collected by O. C. Farrington :

2 specimens of weathered limestone.

4 specimens of Trenton fossils.

115 specimens of gold ore, gypsum, lignite, building stones, minerals, fossil leaves, brachiopods, corals and miscellaneous specimens—Black Hills, S. D., and Buffalo, Wyo.

143 specimens of golden Calcite with Barite, Calcite crystals, Geodes, Baculites, Scaphites, etc.

Collected by O. C. Farrington and H. W. Nichols :

15 specimens, series of beach pebbles—Chicago.

Collected by O. C. Farrington and E. S. Riggs :

About 250 specimens of Vertebrate fossils—Bad Lands, S. D.

Collected by H. W. Nichols :

9 specimens of brick clay, slags, soils, etc.

Large group of Octahedral, Galena and Sphalerite.

Large group of crystallized Calcite.

53 specimens of zinc and lead ores with their associated minerals.

119 specimens of zinc and lead ores and associated minerals of Joplin, Mo., and vicinity.

12 specimens of raw, treated and burned clays.

9 specimens of sub-carboniferous fossils.

1 specimen of spherical siliceous concretion.

Purchases :

2 specimens of Rhodochrosite (purchased from Maynard Bixby, Salt Lake City, Utah).

11 casts of meteorites (purchased from D. Brucciani & Co., 40 Russell street, London, England).

5 mineral specimens, Amber Aphrosiderite, Quartz and Amethyst (purchased from Lydia A. Dexter, 2920 Calumet Ave., Chicago).

1 petrified egg (purchased from Kelley Robinson, Dakota City, S. D.).

Full-sized section of Sacramento Mts. meteorite, weight 2,330 grammes (purchased from A. E. Foote, 1317 Arch St., Philadelphia Pa.).

22 specimens of carboniferous fossils, ferns and calamites (purchased from John Keay, 6009 La Salle St., Chicago).

1 specimen of Basalt containing native iron—Disco Island, Greenland (purchased from Hugh J. Lee, Meriden, Conn.).

12 specimens of Barite, Smithsonite, Limonite, etc. (purchased from G. W. Taylor, 984 63d St., Chicago).

Head and portion of skeleton of Elotherium sp., 1 Placenticerus Placenta, 18 inches in diameter (purchased from Charles F. Thompson, Plymouth, Ind.).

1 iron meteorite, weight 540 grammes (purchased from H. R. Voth, Keams Cañon, Arizona).

2 sections of Roebourne and Mungindi meteorites (purchased from Henry A. Ward, 620 Division St., Chicago).

Full-sized section of San Angelo (Texas) meteorite, weight 1,501 grammes. Full-sized section of Tonganoxie (Kansas) meteorite, weight 264 grammes (purchased from Ward's Natural Science Establishment, Rochester, N. Y.).

FITCH, A. B., Magdalena, New Mexico.

Large specimen of Aurichalcite.

FULTON, J. L., Chicago.

2 fragments from thigh bone of Mastodon.

GEORGIA MARBLE CO., Tate, Pickens Co., Ga.

4 polished slabs of varieties of Georgia marbles.

GOODELL, ROBERT WOOD, Houghton, Mich.

1 specimen of petrified fish, Mioplosus sp.—Wyoming.

GUION, G. MURRAY, 111 E. 47th St., Chicago.

Block showing chert, bedded with limestone—Joliet, Ill.

HAFER, C. C., 911 W. Adams St., Chicago.

44 specimens of Brachiopods, Gasteropods, Lamellibranchs and Bryozoa from the Trenton Shales, near Lake Street Bridge, Minneapolis, Minn

- HAMMOND, GEORGE W., Yarmouthville, Me.
181 specimens of clay stones from various localities.
- HARDIN, B., Two Bits, S. D.
2 moonstones (uncut)—Los Angeles, Cal.
1 specimen of native gold ore.
- HARTWELL, GEORGE H., 161 La Salle St., Chicago.
1,200 Briquettes illustrating tests of varieties of brick clay.
- HAYWARD, J. T. Omaha, Neb.
Photographs of Saratoga, Colo.—Gold Mine model.
- HIGINBOTHAM, H. D., Chicago.
1 specimen of Onyx—Nepigon, Canada.
- HIGINBOTHAM COLLECTION, Field Columbian Museum.
1 specimen of jade from Burmah, weighing 1.237 grammes (transferred from Higinbotham Hall).
- HODGSON, E., Pekin, Ill.
1 specimen of gabbro—supposed meteorite (for examination).
- HOGGINS, MRS. JOHN, Oak Park, Ill.
1 Oreodon skull (tertiary)—Bad Lands, S. D.
- KEAY, JOHN, 6009 La Salle St., Chicago.
1 Fern showing circinate vernation—Minonk, Woodford Co., Ill.
1 specimen of Neuropteris from roof of seam—Westville, Ill.
- KIRKWOOD, R. I., New Denver, B. C.
1 specimen of copper ore—Kootenai District, B. C.
16 specimens of silver-lead ores—Kootenai District, B. C.
- KUNTZE, DR. OTTO, Iowa City, Iowa.
45 specimens of minerals and fossils (exchange).
- LESTER, F. M., 3845 Calumet Ave., Chicago.
9 specimens of siliceous gold ores—Lawrence Co., South Dakota.
- LOWE, CHARLES E., Mt. Crescent House, Randolph, N. H.
1 specimen of yellow Beryl in Granite, Mt. Crescent, N. H.
- MAXSON, COL. H. B., Reno, Nev.
1 specimen of Cinnabar—Reno, Nev.
1 specimen of Sulphur—Humboldt, Nev.
1 specimen of Infusorial earth—Carson City, Nev.
1 specimen of mineral soap—Elks County, Nevada.
1 specimen of plumbago—Battle Mt., Nev.
- MOORE, JOSEPH, Earlham College, Richmond, Ind.
1 specimen of pyrite and quartz (for examination).
- MORTON, JOHN P. & CO., Louisville, Ky.
Map of Mammoth Cave.
- MYERS, J. M. T., Fort Madison, Iowa.
71 specimens of Crinoids, Brachiopods, Bryozoans, etc., of the Keokuk and Burlington groups; 2 Calcite Geodes (exchange).
- NASHVILLE, CHATTANOOGA & ST. LOUIS R. R.
29 specimens of phosphates, iron ores, gold ores and cements—Georgia and Tennessee.
26 specimens of Tennessee phosphates and iron ores.
- PEARSON, WILLIAM R., Goldsboro, N. C.
7 specimens of Pentamerus Oblongus—Lyons, Iowa.
- RANDALL, B. G., 4625 Ellis avenue, Chicago.
1 specimen of Calcite and Sphalerite—Joplin, Mo.
- REESE, LEWIS, 1435 State street, Chicago.
Model in relief of the moon (diameter 19.2 feet).
- SISTERS OF PROVIDENCE, St. Mary's, Vigo county, Indiana.
1 quartz and calcite geode (diameter 12 inches).
- SLOCUM, A. W., Milwaukee, Wis.
44 specimens (12 species) of Devonian fossils (exchange).

STANDARD OIL COMPANY, Chicago.

- 2 specimens of machine and elaine oils.
- 312 specimens of candles.
- 225 spun brass candle-holders.
- 264 paraffine candles.
- 8 fine white candles.

STILES, V. H., 595 East 65th street, Chicago.

- 1 granite pebble, enclosed in magnesian limestone (cotton rock), from the Ozark, near contact of sub-carboniferous—Bolivar, Mo.

STILLWELL, L. W., Deadwood, South Dakota.

- 10 specimens of minerals (exchange).
- 1 specimen of Strophomena (exchange).

STRONG, HENRY, 278 West Madison street, Chicago.

- Trap showing fissure produced by weathering.

SVEGE, A. E. J., Field Columbian Museum.

- 1 meteorite—Estherville, Emmet county, Iowa.

WARD, HENRY A., 620 Division street, Chicago.

- 1 specimen of Arlington (Minn.) meteorite, weight 70 grammes (exchange).

WEARE, W. W., Old Colony building, Chicago.

- 1 specimen of jade—St. Michaels, Alaska.

WILLISTON, PROF. S. W., Lawrence, Kan.

- Figures of Kansas Mosasaurs.

WOLFE, J. S., Cedar Rapids, Neb.

- 1 specimen of Brachiopod in Sub-carboniferous limestone—2 miles north of Weaubleau, Mo.

DEPARTMENT OF ORNITHOLOGY.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

BRANDLER, CHARLES, Field Columbian Museum.

- 1 mounted short-eared owl, *Asio accipitrinus*.
- 2 mounted long-billed marsh wrens, with nest.
- 9 wading birds—Mud Lake, Chicago.

BRYAN, WILLIAM A., Field Columbian Museum.

- 1 short-eared owl, *Asio accipitrinus* (in flesh).
- 1 brant (blue goose)—Rock River Falls, Ind.
- 1 buffle-head duck—Jackson Park, Chicago.

DARRAGH DR. THOMAS, 1011 Tacoma building, Chicago.

- 1 mounted domestic pigeon—Chicago.

FIELD COLUMBIAN MUSEUM.

Collected by William A. Bryan:

- 3 American herring gulls—Jackson Park, Chicago.
- 27 bird skins, Passerim—83rd street, Chicago.

Collected by S. E. Meek:

- 1 mocking-bird—Tampa, Fla.
- 1 Cape May warbler—Tampa, Fla.

Purchases:

- 1 scaup duck (purchased from J. N. Adams, Chicago).
- 2 green-wing teal ducks (purchased from B. Aron & Son, Chicago).
- 1 American golden-eye duck—Illinois (purchased from George Benzenville & Co., Chicago).
- 6 bird skins (purchased from the Chicago market, Chicago).
- 1 blue goose, 1 canvas-back duck (purchased from A. M. Mullin, Chicago).
- 1 gadwall duck—New Boston, Ill. (purchased from Stiffey Brothers, Chicago).

GAUMER, GEORGE F., Izamal, Yucatan.

- 9 bird skins, 1 bird egg—Yucatan.

HARRIS, MRS. JOSEPH, 3112 South Park avenue, Chicago.

1 humming-bird nest.

KANI, SAMUEL W., St. John, N. B.

19 bird skins—Japan.

SAMTER, MANNIE, Knoxville, Iowa.

1 whistling swan—Knoxville, Iowa.

SECTION OF PHOTOGRAPHY.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

DEPARTMENT OF ANTHROPOLOGY, Field Columbian Museum.

4 negatives, Ethnological objects.

FIELD COLUMBIAN MUSEUM.

317 negatives, made by Section of Photography, from October 1, 1897, to September 30, 1898, to illustrate lectures, publications, etc.

631 prints, made by Section of Photography, from October 1, 1897, to September 30, 1898.

101 enlargements (on glass and paper), made by Section of Photography, from October 1, 1897, to September 30, 1898.

406 lantern slides, made by Section of Photography, from October 1, 1897, to September 30, 1898.

1,824 negatives of specimens in Museum, used in lectures and to illustrate publications, made by Museum Photographer.

FIELD COLUMBIAN MUSEUM EXPEDITION.

Made by E. P. Allen:

256 negatives, Indian portraits, general views and details—Northwest coast.

Made by George A. Dorsey:

14 negatives, Indian portraits, etc.—Oraibi Village, Arizona.

Made by O. C. Farrington:

13 negatives, views in the "Bad Lands"—Black Hills, S. D.

Made by S. E. Meek:

13 negatives in and around Tampa, Fla.

Made by C. F. Millspaugh:

9 negatives, tree portraits—Mt. Carmel, Ill.

6 negatives, tree portraits—Mississippi.

82 negatives, forestry scenes—Upper Michigan.

Made by H. W. Nichols:

36 negatives, views in zinc and lead mines—Joplin, Mo.

Purchases:

44 lantern slides, illustrating lecture "A Glance at the Leading Types of the Animal Kingdom" (purchased from Frank C. Baker, Chicago).

2 lantern slides (purchased from P. H. Dorsett, Department of Agriculture, Washington, D. C.).

16 lantern slides (purchased from Ben. Haines, New Albany, Ind.).

12 lantern slides (purchased from W. H. Jackson Photo. Co., Denver, Colo.).

6 lantern slides, illustrating "Tour of the Plant World" (purchased from T. H. McAllister & Co., 49 Nassau street, New York, N. Y.).

7 lantern slides (purchased from A. T. Thompson & Co., Boston, Mass.).

GEORGIA R. R. EXHIBIT, Nashville Exposition.

6 photographs of their exhibit at Nashville, 1897.

MILLSPAUGH, DR. C. F.

2 negatives of the great mound at Moundville, W. Va.

SPECIAL ACCESSIONS.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AYER, EDWARD E., Chicago.

Primitive wooden plow—Santa Fe, N. M.

Bill of lading of the steamer Majestic from Natchez to St. Louis in 1834.

Receipt of money to apply on stock of the Hudson River Steamboat Co.,
signed by Robert Fulton.

FIELD COLUMBIAN MUSEUM.

Purchases:

Collection of Folk Lore of precious stones (purchased from George F.
Kunz, New York, N. Y.).

DEPARTMENT OF TRANSPORTATION.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

BALDWIN, E. B., Naperville, Ill.

1 old high-frame bicycle.

DRAKE, A. A., St. Thomas, Ontario.

Wooden models of rails, etc., showing method of holding nuts on bolts by
donor's patented process.

MELOY, E. S., Chicago.

1 Chicago & Rock Island R. R. Line pass, dated December 31, 1860.

DEPARTMENT OF ZOOLOGY.

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ALSTON, G. C., Field Columbian Museum.

1 raccoon.

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N. Y.

1 female buffalo skin and skeleton, 1 skin and skeleton of American buffalo, 4 Greenland seals, 6 walrus, 1 skeleton of Indian antelope, 8 monkeys, 14 carnivore, 6 opossums, 748 rodents and insectivora, skin and bones of calf of American bison (exchange).

ASHBY, J. H., Manager Union Stock Yards, Chicago.

1 skeleton of domestic hog.

1 skeleton of sheep.

AYER, EDWARD E., Chicago.

34 mammal skins, with their skeletons—Madagascar.

BAILEY, G. V., Field Columbian Museum.

1 squirrel, *Spermophile*.

BEBB, Dr. M. S., Rockford, Ill.

Large collection of shells—Illinois and Ohio.

BOSTOCK, FRANK C., Chicago.

1 giant kangaroo.

1 fox.

1 badger, *Coati mundi*.1 lizard, *Gila monster*.1 lizard, *Iguana*.

1 alligator.

BOYER, LEWIS, Fort Bayard, N. M.

1 horned toad, *Phrynosoma cornutum*.

BRAGDON, C. E., 147 Fifth avenue, Chicago, Ill.

1 brown bat.

BRANDLER, CHARLES, Field Columbian Museum.

1 skeleton of setter dog.

BRINKMAN, C., Chicago.

2 alligators.

BRYAN, W. A., New Sharon, Iowa.

1 skeleton of Shetland pony.

CHOPE, E. B., Field Columbian Museum.

184 butterflies and moths hatched in Museum building.

403 butterflies and moths (140 species), 1 bat, 11 shells, 2,180 beetles (variety of species), 265 other insects—Cook Co., Ill.

CITY OF CHICAGO, Chicago, Ill.

1 skeleton of a horse.

DIXON, W. H., 5225 Jefferson avenue, Chicago.

1 skeleton of domestic cat.

3 snakes (2 species), 1 garter snake, 3 snapping turtles.

DODSON, C. E., London, England.

2 photographs of lion.

FARRINGTON, O. C., Field Columbian Museum.

11 beetles—Harrison, So. Dak.

FIELD COLUMBIAN MUSEUM.

Collected by E. B. Chope, Field Columbian Museum:

1,863 beetles, 12 butterflies (10 species)—La Crosse and Juneau Counties, Wis.

Collected on East African Expedition, by D. G. Elliot:

1 chectah (young).

Collected by S. E. Meek, Field Columbian Museum:

5 gray squirrels, 45 species of fishes—Greenway, Ark.

32 species of fishes, 3 species of crustaceans—Florida.

3 species of echinodermis, 2 species of shells, 1 snake—Florida.

5 cave salamanders, 1 blind fish—Mitchell, Ind.

31 species of fishes, 1 turtle—Salt Creek, Clinton, Ill.

6 species of turtles, 48 species of fishes—Havana, Ill.

5 bats, 2 mice, 1 snake, 1 salamander, 6 frogs—Caves near Mitchell, Ind.

57 beetles—Paw Paw, Mo.

Purchases:

40 species of fishes—Lower California (purchased from A. W. Anthony, Portland, Ore.).

2 skeletons of apteryx mantelli, the "Kiwi" (purchased from O. Spanner & Co., Toronto, Can.).

2 fur seals (purchased from the Stanford University, Palo Alto, Cal.).

35 rodents, 2 carnivore, 3 gray squirrels, 13 mammal skins, 39 mammal skins (squirrels), (purchased from Thaddeus Surber, White Sulphur Springs, W. Va.).

23 specimens of rodents (purchased from E. S. Thompson, 141 Fifth avenue, New York, N. Y.).

1 water buck, skin and skull (purchased from Rowland Ward & Co., London, England).

Collection of pearl-bearing mollusks (purchased from Mrs. E. C. Wiswall, Kenosha, Wis.).

GAUMER, DR. G. F., Izamal, Yucatan.

3 frogs, 2 snakes, 2 lizards, 1 toad, 1 small box of insects, 11 shells, 4 small mammals—Izamal, Yucatan.

HANLEY, PATRICK, 5529 La Salle street, Chicago.

1 salamander—Jackson Park, Chicago.

HAINES, MRS. FLORA, Boston, Mass.

1 ablone, Halotis rubescens (exchange).

HENION & HUBBELL, 61-69 N. Jefferson street, Chicago, Ill.

1 centipede.

HUME, JAMES, Field Columbian Museum.

□ 1 dogfish—Lagoon, Jackson Park, Chicago.

KENKEL, LOUIS, 140 Fifty-fourth street, Chicago.

- 9 salamanders.
- 1 shrew.
- 1 mouse.
- 3 frogs.

LAWRENCE, W. J., Chicago.

- 4 carpet shells, *Tapes staminea*.

MEARNS, E. A., United States Army, Fort Clark, Kinney Co., Texas.

- 17 species of land and fresh-water shells.

MEEK, HIRAM, Hicksville, Ohio.

- 1 woodchuck skin.
- 1 chipmunk skin.
- 3 red squirrels.
- 2 fox squirrels.
- 1 minkskin.

MEEK, S. E., Field Columbian Museum.

- 1 hellbender, *Cryptobranchus alleghaniensis*.

MITCHELL, LUCIAN, Greenway, Ark.

- 1 mole, 7 bats—Greenway, Ark.

NORRIS, PHILLIP, Field Columbian Museum.

- 1 turtle—Chicago.

OGDEN, DR. H. V., Milwaukee, Wis.

- 12 species of small fresh-water fish (for examination).
- 27 small mammal skins (for examination).

ROLFS, PROF. P. H., Lake City, Fla.

- 1 alligator for skeleton.

STERT, A., 5649 Cottage Grove avenue, Chicago.

- 1 ground squirrel—Uvalde County, Texas.

THOMPSON, A. J., Field Columbian Museum.

- 3 fishes (2 species).

UNITED STATES NATIONAL MUSEUM, Washington, D. C.

- 1 fish, *Cyprinodon mydrus*—Key West.
- 1 fish, *Cyprinodon bovinus*—Chihuahua, Mex.
- 1 fish, *Cyprinodon riverendi*—Cuba.

ZOOLOGICAL MUSEUM, OHIO STATE UNIVERSITY, Columbus, Ohio.

- 7 fishes, *Etheostoma variatum*—Ohio (exchange).
- 3 fishes, *Etheostoma camurum*—Ohio (exchange).
- 1 fish, *Leuciscus elongatus*—Ohio (exchange).

THE LIBRARY.

(ACCESSIONS ARE BY EXCHANGE UNLESS OTHERWISE DESIGNATED.)

Books, Pamphlets and Serials.

ACHELIS, TH., Bremen, Germany.

Archiv für religionswissenschaft, vol. 1, no. 1.
Friedrich Ratzel.

ALABAMA INDUSTRIAL AND SCIENTIFIC SOCIETY, University, Ala.

Proceedings, vol. 7, pt. 2.

AMERICAN ACADEMY OF ARTS AND SCIENCES, Boston, Mass.

Proceedings, current nos.

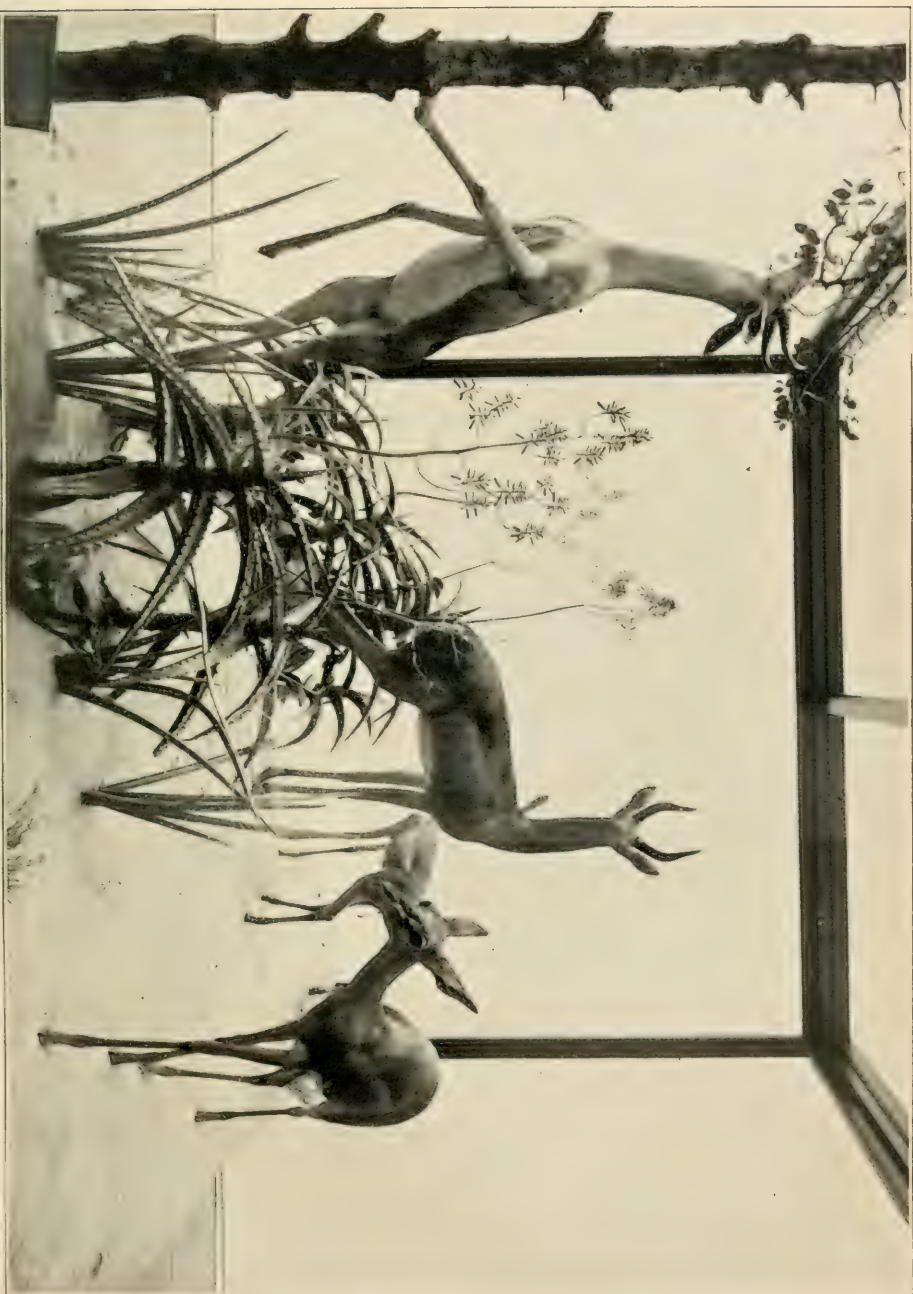
AMERICAN ANTIQUARIAN SOCIETY, Worcester, Mass.

Proceedings, vol. 11, pt. 3, and vol. 12.

AMERICAN ASSOCIATION FOR THE ADV. OF SCI., Boston, Mass.

Preliminary announcement of the Boston meeting, 1898.
Proceedings, 46th meeting, 1897.

- AMERICAN FORESTRY ASSOCIATION, Washington, D. C.
The Forester, current nos.
- AMERICAN MUSEUM OF NATURAL HISTORY, New York City.
Annual report, 1897.
Bulletin, vol. 9.
- AMERICAN NUMISMATIC AND ARCHEOL. SOCIETY, New York City.
Proceedings and papers, 39th annual meeting, 1896-'97.
- AMERICAN ORIENTAL SOCIETY, New Haven, Conn.
Journal, vol. 19, pt. 2.
- AMERICAN PHILOSOPHICAL SOCIETY, Philadelphia, Pa.
Proceedings, current nos.
- AMSTERDAM K. AKAD. VAN WETENSCHAPPEN, Amsterdam, Netherlands.
Verhandeligen, 2d section, vols. 1-5.
Verslagen van de zittingen, vols. 1-5.
- AMSTERDAM. UNIVERSITY LIBRARY, Amsterdam, Netherlands.
Collection of 30 university publications.
- ANDOVER THEOLOGICAL SEMINARY, Andover, Mass.
Catalogue, 1897-'98.
- ANDREE, RICHARD, Braunschweig, Germany.
Globus, vols. 72 and 73.
- ANTHROP. INST. OF GREAT BRITAIN & IRELAND, London, England.
Journal, vol. 27, current nos.
- ARIZONA AGRICULTURAL EXP. STATION, Tucson, Arizona.
Bulletin, nos. 27-29.
- ARTHUR, J. C. (the author), La Fayette, Ind.
Movement of protoplasm in coenocytic hyphæ, with 3 other pams.
- ASHMEAD, A. S., New York City.
Racial degeneracy in America: goitre and dwarfing (gift).
- ASIATIC SOCIETY OF BENGAL, Calcutta, Bengal.
Journal, current nos.
Proceedings, current nos.
The Kaçmiraçabdamrta, pt. 1, by Içvara-Kaula.
- ASSOCIATION OF AMERICAN ANATOMISTS, Washington, D. C.
History, constitution, etc.
Proceedings, 5th-9th annual session (gift).
- AUSTRALIAN MUSEUM, Sydney, New South Wales.
Annual report, 1896.
Catalogue of Australian birds, pts. 1 and 2.
Memoirs, vol. 3, pts. 4-6.
Records, vol. 3, nos. 3 and 4.
- BÄCHSTRÖM, HELGE (the author), Stockholm, Sweden.
Vestanåfältet, with 8 pams.
- BAKER, F. C. (the author), Chicago.
Notes on radulæ.
The molluscan fauna of western New York.
- BAKER, R. T. (the author), Sydney, New South Wales.
Contributions to a knowledge of the flora of Australia, no. 1, with 4 other pams.
- BAUER, MAX (the author), Marburg, Hesse, Germany.
Beiträge zur geologie der Seyschellen.
- BELL, A. G. (the author), Washington, D. C.
The question of sign language and the utility of signs.
- BELOIT COLLEGE, Beloit, Wis.
Catalogue, 1897-'98.
Semi-centennial anniversary, 1897-'98.
- BERLIN. FRIEDRICH-WILHELM'S-UNIVERSITÄT, Berlin, Germany.
37 inaugural dissertations.



GROUP OF WALLER'S GAZELLES.—FIELD COLUMBIAN MUSEUM.

(Dimensions of Case, 10x10x8.)

C. E. Akeley, Taxidermist.

- BERLIN. KÖNIGLICHE BIBLIOTHEK, Berlin, Germany.
Jahres-verzeichniss der an den deutschen universitäten erschienenen
schriften, vols. 1-12.
- BERLIN. K. BOTANISCHE GARTEN UND MUSEUM, Berlin, Germany.
Bericht, 1897-'98.
Notizblatt, vol. 2, nos. 10-14.
- BERLIN. K. PREUSSISCHE AKAD. DER WISSENSCHAFTEN, Berlin,
Germany.
Sitzungsberichte, current nos.
- BERLIN. MUSEUM FÜR NATURKUNDE, ZOOL. SAMMLUNG, Berlin,
Germany.
Bericht, 1897-'98.
Mitteilungen, vol. 1, no. 1.
3 pamphlets.
- BERLINER GESELLSCHAFT FÜR ANTHROPOLOGIE, Berlin, Germany.
Zeitschrift für ethnologie, current nos.
- BEYER, G. E. (the author), New Orleans, La.
Contributions on the life histories of certain snakes.
Publications of the Louisiana Historical Society, vol. 2, pt. 1.
- BLACK DIAMOND COMPANY, Chicago.
Black diamond, current nos. (gift).
- BLANCHARD, RUFUS & COMPANY, Chicago.
Discovery and conquest of the Northwest, pt. 1 (gift).
- BLYTT, AXEL (the author), Christiania, Norway, Europe.
Nye bidrag til kundskaben om karplanternes udbredelse i Norge.
- BOETTGER, FRED, Peoria, Ill.
Annual report (3d) of the Board of Trustees of Park District, Peoria (gift).
- BOLTON, HERBERT (the author), Manchester, England.
Descriptive geological labels, with 5 other pams. (gift).
- BOMBAY PRESIDENCY. DEP'T. OF LAND RECORDS AND AGRIC.,
Bombay, India.
Annual report, 1896 and 1897.
Crop experiments, 1896-'97.
Report on the rail and road-borne trade, 1896-'97.
Returns of the rail-borne trade, 1897-'98.
- BOSTON. MUSEUM OF FINE ARTS, Boston, Mass.
Annual report, 22d.
Catalogue of a loan exhibition of book-plates and super-libros.
- BOSTON. PUBLIC LIBRARY, Boston, Mass.
Annual list of new and important books added, 1896-'97.
Annual report, 46th.
Monthly bulletin of books added, current nos.
- BOSTON. SOCIETY OF NATURAL HISTORY, Boston, Mass.
Proceedings, current nos.
- BOSTON TRANSIT COMMISSION, Boston, Mass.
Annual report, 3d.
- BRIDGEPORT PUBLIC LIBRARY, Bridgeport, Conn.
Annual report, 17th.
- BRINTON, D. G. (the author), Media, Pa.
The ethnic affinities of the Guetares of Costa Rica, with 3 other pams.
- BRITISH ASSOCIATION, London, W., England.
Report of the 67th meeting, Toronto, 1897.
- BRITISH COLUMBIA. BUREAU OF STATISTICS, Victoria, B. C.
Annual report (18th) of the British Columbia Board of Trade.
British Columbia mining record, vol. 3, nos. 10-12.
Bulletin, no. 2, pt. 1, of the Natural History Society of British Columbia.
Fifth report of the Department of Agriculture.
The Klondike mining district, by W. Ogilvie.

- BRITISH COLUMBIA. BUREAU OF STATISTICS, Victoria, B. C.
 Lecture on the Yukon Gold Fields, by W. Ogilvie.
 Report of the Dairymen's Association, 1896-'97, with 2 other reports.
 Report of the minister of mines, 1897.
 Report of the Vancouver Board of Trade, 1896-'97.
 Seventh report of the British Columbia Fruit Growers' and Horticultural Society, 1898 (gift).
- BRITISH MUSEUM, London, S. W., England.
 "Alert" report, 1884.
 General guide, 1896.
 List of British diatomaceæ, 1859.
 List of cetacea, 1885.
 15 catalogues.
 9 guides.
- BROOKLYN LIBRARY, Brooklyn, N. Y.
 Annual report, 40th.
 Bulletin, no. 36.
- BROWN UNIVERSITY, Providence, R. I.
 Annual report, 1896.
 Catalogue, 1897-'98.
- BROWN, FRANCIS F., Chicago.
 The Dial, current nos. (gift).
- BRUXELLES. ACAD. ROYALE DE BELGIQUE, Bruxelles, Belgium.
 Annuaire, 1898.
 Bulletin, 3d ser., vol. 35, current nos.
- BRUXELLES. MUSÉE ROYAL D'HISTOIRE NATURELLE, Bruxelles, Belgium.
 Guide dans les collections.
- BRUXELLES. SOCIÉTÉ D'ARCHÉOL., Bruxelles, Belgium.
 Annals, vol. 11 and vol. 12, current nos.
- BRUXELLES. SOCIÉTÉ ROYALE LINNÉENNE, Bruxelles, Belgium.
 Bulletin, 23d year, nos. 1-7 and 9.
- BUENOS AIRES. INST. GEOGRAFICO ARGENTINO, Buenos Aires, Argentina.
 Boletín, vol. 18, nos. 4-9.
- BUENOS AIRES. MUSEO NACIONAL, Buenos Aires, Argentina.
 Anales, vol. 5.
 Memorias, 1894-'96.
- BUFFALO PUBLIC LIBRARY, Buffalo, N. Y.
 Finding list, 1897.
 First annual report, 1897.
- BUFFALO SOCIETY OF NATURAL SCIENCES, Buffalo, N. Y.
 Bulletin, vol. 5, no. 5, and vol. 6, no. 1.
- BURT, E. A. (the author). Middleburg, Vt.
 The phalloideæ of the United States, with two other pams.
- BUSCHAN, G. (the author), Stettin, Germany.
 Aus der italienischen literatur, with 8 other pams.
- BUSSEY INSTITUTION, Jamaica Plain, Mass.
 Bulletin, vol. 2, pts. 6 and 7.
- BUTCHERS AND PACKERS MAGAZINE CO., St. Louis, Mo.
 Butchers and packers magazine, current nos. (gift).
- CALCUTTA. ROYAL BOTANIC GARDEN, Calcutta, India.
 Annual report of the Government Cinchona Plantation in Sikkim, 1896-'97.
- CALIFORNIA ACADEMY OF SCIENCES, San Francisco, Cal.
 Proceedings, current nos.
- CALIFORNIA AGRICULTURAL EXP. STATION, Berkeley, Cal.
 Bulletin, nos. 120 and 121.
 Partial report of work for the years 1895-'96 and 1896-'97 (gift).

CALIFORNIA UNIVERSITY, Berkeley, Cal.

Annual report, 1897.

Bulletin of the Department of Geology, vol. 2, nos. 3 and 4.

Register, 1896-'97.

University chronicle, vol. 1, nos. 1-3.

1 pamphlet.

CAMBRIDGE PUBLIC LIBRARY, Cambridge, Mass.

Bulletin, vol. 2, current nos.

CAMBRIDGE UNIVERSITY, Cambridge, England.

Annual report of the Library Syndicate, 1897.

Annual report (32d) of the Museums and Lecture-Rooms Syndicate.

CANADA. ROYAL SOCIETY, Ottawa, Canada.

Proceedings and transactions, 2d ser., vol. 2.

CANADIAN INSTITUTE, Toronto, Canada.

Proceedings, vol. 1, nos. 4 and 5.

Transactions, vols. 1-3, vol. 4, pt. 1, and vol. 5, pt. 2

CARDOT, JULES (the author), Stenay (Meuse), France.

Repertoire spagnologique, with 1 pam.

CARNEGIE INSTITUTE, Pittsburgh, Pa.

Catalogue of collection of pictures loaned by R. H. McCormick.

Founder's day, 1897.

Second annual exhibition held at the Carnegie Institute, 1897.

CARNEGIE LIBRARY, Pittsburgh, Pa.

Annual report, 2d, 1897.

CARPENTER, GEORGE H., Dublin, Ireland.

The Irish naturalist, current nos.

CARR, LUCIEN (the author), Cambridge, Mass.

Dress and ornaments of certain American Indians.

CATHOLIC UNIVERSITY OF AMERICA, Washington, D. C.

Catholic University bulletin, vol. 3, no. 4, and vol. 4, nos. 2 and 3.

Catholic University chronicle, vol 1, nos. 7-12.

CENTRAL ART ASSOCIATION, Chicago.

Arts for America, current nos. (gift).

CERAMIC MONTHLY PUBLISHING CO., Chicago.

Ceramic monthly, current nos. (gift).

CHESTER, A. H. (the author), New Brunswick, N. J.

Catalogue of minerals, 3d ed.

On krennerite from Cripple Creek.

CHICAGO ACADEMY OF SCIENCES, Chicago.

Annual report, 40th.

CHICAGO ART INSTITUTE, Chicago.

Annual report, 18th, 1896-'97, and 19th, 1897-'98.

Catalogue of the tenth annual exhibition of oil paintings and sculpture by American artists.

Exhibition of work by Chicago artists, February, 1898.

Second annual exhibition of the Society of Western Artists.

CHICAGO UNIVERSITY, Chicago.

Annual register, 1896-'97 and 1897-'98.

CHICAGO HISTORICAL SOCIETY, Chicago.

Report of annual meeting, Nov. 16, 1897.

CHRISTIANIA UNIVERSITETS BIBLIOTHEK, Christiania, Norway.

Fauna Norvegiae, pt. 1, by G. O. Sars.

Norrönaskaller, by J. Barth.

CINCINNATI. HOUSE OF REFUGE, Cincinnati, Ohio.

Annual report, 47th.

The proper training of juvenile delinquents, by J. Allison.

- CINCINNATI MUSEUM ASSOCIATION, Cincinnati, Ohio.
 Annual report, 17th, 1897.
 Catalogue of 5th annual exhib. of works by American artists.
 Notes upon an exhibition of paintings, December, 1897.
 Second annual exhibition of the Society of Western Artists.
- CINCINNATI SOCIETY OF NATURAL HISTORY, Cincinnati, Ohio.
 Journal, vol. 19, nos. 3 and 4, with 1 pam.
- CINCINNATI TECHNICAL SCHOOL, Cincinnati, Ohio.
 Annual catalogue, 1896-'97 and 1897-'98.
- CLARKE, ROBERT, Glendale, Ohio.
 Introduction to the study of North American archæology, by C. Thomas.
- CLAUSTHAL. K. BERGAKADEMIE UND BERGSCHULE, Clausthal, Han-
 over, Germany.
 Katalog der bibliothek.
 Programm, 1898-'99.
- CLAY RECORD PUB. CO., Chicago.
 Clay record, current nos. (gift).
- COHEN, E. (the author), Greifswald, Germany.
 Ein neues meteorseisen von Beaconsfield, Australia, with 6 other pams.
- COLBY UNIVERSITY, Waterville, Maine.
 Catalogue, 1897-'98.
- COLLIERY ENGINEER CO., Scranton, Pa.
 The Colliery engineer, current nos. (gift).
- COLLINGE, WALTER E. (the author), Birmingham, England.
 A collection of slugs from the Hawaiian Islands, with 3 other pams.
- COLORADO AGRICULTURAL EXP. STATION, Fort Collins, Colo.
 Bulletin, current nos.
- COLORADO SCIENTIFIC SOCIETY, Denver, Colo.
 Bulletin, no. 11.
 Circular, no. 1.
 Proceedings, vol. 5, 1894-'96, with 3 pams.
- COLORADO STATE BUREAU OF MINES, Denver, Colo.
 Report, 1897.
- COLUMBIA UNIVERSITY, New York City.
 Annual report, 8th, 1897.
 Bulletin, nos. 18-20.
 Catalogue, 1897-'98.
- COMBS, ROBERT (the author), Ames, Iowa.
 Alfalfa leaf-spot disease
 Plants collected in the District of Cienfuegos, 1895-'96 (gift).
- CONNECTICUT ACADEMY OF ARTS AND SCIENCES, New Haven, Conn.
 Transactions, vols. 1-7.
- CONNECTICUT AGRICULTURAL EXP. STATION, New Haven, Conn.
 Annual report, 1897 (gift).
 Bulletin, current nos.
- COOK, O. F., Huntington, N. Y.
 Third report of the New York State Colonization Society.
- COOPER UNION, New York City.
 Annual report, 39th.
- CORNELL COLLEGE, Mt. Vernon, Iowa.
 The Pisgah of the century, by W. F. King.
- CORNELL UNIVERSITY AGRICULTURAL EXP. STATION, Ithaca, N. Y.
 Bulletin, current nos.
- COSTA RICA. MUSEO NACIONAL, San José, Costa Rica.
 Informe, 1897-'98.
- CRANDALL, C. C. (the author), Fort Collins, Colo.
 Natural reforestation on the mountains of northern Colorado.

- CUSHING, F. H. (the author), Washington, D. C.
A preliminary report on the exploration of ancient key-dweller remains on the gulf coast of Florida, with 3 pams.
- CZERNOWITZ. K. K. FRANZ- JOSEPHS- UNIVERSITÄT, Czernowitz, Bukowina.
Uebersicht der akademischen behörden, 1898-'99.
Verzeichnis der öffentlichen vorlesungen, 1898-'99.
- DAMES, WILHELM (the author), Berlin, Germany.
Über die gliederung der flötzformationen Helgolands, with 5 other pams.
- DARAPSKY, LUIS (the author), Santiago de Chile, Chile.
Las aguas minerales de Chile, with 2 pams. (gift).
- DARTMOUTH COLLEGE, Hanover, N. H.
Addresses of living graduates, 1897.
Catalogue, 1897-'98.
- DAWSON, J. WILLIAM (the author), Ottawa, Canada.
On the genus lepidophloios.
- DAY, D. T., Washington, D. C.
Across the Everglades, by H. L. Willoughby.
- DEAN, BASHFORD (the author), New York City.
Note on the ventral armoring of dinichthys, with 4 other pams.
- DELAWARE COLLEGE, AGRICULTURAL EXP. STATION, Newark, Del.
Bulletin, current nos. (gift).
- DETROIT MUSEUM OF ART, Detroit, Mich.
Annual report, 1897-'98.
- DETROIT PUBLIC LIBRARY, Detroit, Mich.
Annual report, 33rd.
- DEWALQUE, G., Liège, Belgium.
Mélanges géologiques, ser. 6 and 7.
- DIELS, L. (the author), Berlin, Germany.
Die epharmose der vegetationsorgane bei rhus l. & gerontogæa Engl. (gift).
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- WYOMING HIST. AND GEOL. SOCIETY, Wilkes-Barre, Pa.
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- WYOMING UNIVERSITY, Laramie, Wyo.
Catalogue, 1897-'98.
- YALE UNIVERSITY, New Haven, Conn.
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Über dem azurit vom Laurion-gebirge in Griechenland, with 8 other pams.



NORTH HALL OF GEOGRAPHIC GEOLOGY—FIELD COLUMBIAN MUSEUM.

ARTICLES OF INCORPORATION.

STATE OF ILLINOIS.

DEPARTMENT OF STATE.

WILLIAM H. HINRICHSSEN, *Secretary of State* :

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING :

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO, is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSSEN,
SECRETARY OF STATE :

SIR :

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled, "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof ; and that for the purposes of such organization we hereby state as follows, to wit :

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."
2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archeology, Science and History.
3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.
4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence :

Ed. E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McMurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaatt, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, Geo. M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS, }
COOK COUNTY. } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[Seal]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

FIELD COLUMBIAN MUSEUM.

AMENDED BY-LAWS.

(APRIL 25, 1898.)

ARTICLE I.

MEMBERS.

SECTION 1. Members shall be of five classes, Annual Members, Corporate Members, Life Members, Patrons and Honorary Members.

SEC. 2. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after notice of election, and within thirty days after each recurring annual date. The failure of any person to make such initiatory payment and such annual payments within said time shall, at the option of the Board of Trustees, be ground of forfeiture of annual membership.

This said annual membership shall entitle the member to:

First.—Free admittance for himself and family to the Museum on any day.

Second.—Ten tickets every year admitting the bearer to the Museum on pay days.

Third.—A copy of every publication of the Museum sold at the entrance door, and to the annual reports.

Fourth.—Invitations to all receptions, lectures or other entertainments which may be given at the Museum.

SEC. 3. The corporate members shall consist of the persons named in the articles of association, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such persons named in the articles of association shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as corporate members, shall, within ninety days of their respective election, pay into the treasury the sum of twenty dollars (\$20.00) or more. The failure of any person to make such payments within said time shall, at the option of the Board of Trustees, be ground for forfeiture of his corporate membership. The annual dues of corporate members shall be five dollars (\$5.00) after the first year of membership, and no one shall exercise the rights of a corporate member until his dues are paid; and a delinquency of six months in the payment of annual dues shall be ground for forfeiture of corporate membership. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues.

SEC. 4. Any person paying into the treasury the sum of five hundred dollars at any one time shall, upon the unanimous vote of the trustees, become a life member. Life members shall be exempt from all dues.

SEC. 5. Patrons shall be chosen by the Board of Trustees, upon recommendation of the Executive Committee, from among persons who have rendered

eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as patrons, shall also be corporate members.

SEC. 6. Honorary members shall be chosen from among persons who have rendered eminent service to science, art or mechanics. They shall be chosen by a vote of the Trustees, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues. In commemoration of the 14th day of October, honorary members shall not be more than fourteen in number at any one time.

SEC. 7. All members of whatever class shall be eligible to appointment upon committees other than the Executive Committee.

ARTICLE II.

OFFICERS.

SECTION 1. The respective members of the Board of Trustees now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled by a majority vote of the remaining members of the Board of Trustees at any regular meeting.

SEC. 2. The other officers shall be President, two Vice-Presidents, Secretary and Treasurer, and an Executive Committee of four persons, who shall be chosen by ballot by the Board of Trustees from their own number as early as practicable after the annual meeting in each year. The President shall be *ex-officio* a member of the Executive Committee, in addition to the other four members. The Secretary and Treasurer may, or may not, be the same person, and the Secretary may, or may not, be a corporate member.

Any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SEC. 3. The President shall appoint from among the Trustees a Committee on Finance, a Committee on Property, an Auditing Committee, and a Committee on Buildings and Grounds, who shall serve during the pleasure of the Board.

SEC. 4. The officers shall perform such duties as ordinarily appertain to their respective offices, and such other duties as the Board of Trustees may from time to time devolve upon them. The Treasurer shall give bond in such amount and with such surety as shall be approved by the Executive Committee, and shall disburse the funds of the Museum only in accordance with the directions of the Executive Committee, upon the signature and counter-signature of such officers as the Executive Committee shall empower thereto.

SEC. 5. The Executive Committee shall have full control of the affairs of the Museum, under the general supervision of the Board of Trustees.

ARTICLE III.

MEETINGS.

SECTION 1. In commemoration of the discovery of America by Christopher Columbus, the annual meeting of the corporate members shall be held on the 14th day of October in each year, except when that day falls on a Sunday, and then upon the Monday following. At such meetings the corporate members shall

transact such business as may properly come before the meeting. Special meetings of the corporate members shall be called at any time by the Secretary upon written request of twenty corporate members. In such case, thirty days' notice by mail shall be given to corporate members of the time, place and purpose of such meetings.

SEC. 2. Regular meetings of the Board of Trustees shall be held upon the 14th day of October, except when that day falls on a Sunday, and then upon the Monday following, and upon the last Monday of January, April and July of each year. Special meetings may be called by the President at any time upon reasonable notice by mail, and shall be called upon the written request of three Trustees. Five Trustees shall constitute a quorum.

ARTICLE IV.

AMENDMENTS.

SECTION 1. These By-Laws may be amended at any regular meeting of the Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at the last regular meeting preceding, or shall be recommended by the Executive Committee.

HONORARY MEMBERS.

CHARLES B. CORY.

MARY D. STURGES.

EDWARD E. AYER.

HARLOW N. HIGINBOTHAM.

PATRONS.

ALLISON V. ARMOUR.

FREDERICK J. V. SKIFF.

WILLARD A. SMITH.

WILLIAM I. BUCHANAN.

FREDERICK W. PUTNAM.



HOPÍ HUNTER—ETHNIC GROUP—FIELD COLUMBIAN MUSEUM.

Cast from life and sculptured by F. B. Melville.

CORPORATE MEMBERS.

ADAMS, GEORGE E.	HIGINBOTHAM, H. N.
ALDIS, OWEN F.	HUTCHINSON, CHARLES L.
ARMOUR, ALLISON V.	JACKSON, HUNTINGTON W.
ARMOUR, PHILIP D.	JONES, ARTHUR B.
AYER, EDWARD E.	KEITH, E. G.
BAKER, WILLIAM T.	KOHLSAAT, HERMAN H.
BARTLETT, A. C.	LATHROP, BRYAN
BLACK, JOHN C.	LEITER, L. Z.
BLAIR, WATSON F.	McCAGG, E. B.
BLATCHFORD, ELIPHALET W.	McCLURG, A. C.
BRYAN, THOMAS B.	McCONNELL, JOHN
BUCHANAN, W. I.	McCORMICK, CYRUS H.
BUCKINGHAM, EBENEZER	McNALLY, ANDREW
BURNHAM, DANIEL H.	MANIERRE, GEORGE
BUTLER, EDWARD B.	MITCHELL, JOHN J.
CLARK, JOHN M.	PATTERSON, ROBERT W.
CHALMERS, W. J.	PECK, FERD. W.
CHATFIELD-TAYLOR, H. C.	PETERSON, ANDREW
CRAWFORD, ANDREW	PETERSON, P. S.
CURTIS, WILLIAM E.	PEARCE, J. IRVING
DAVIS, GEORGE R.	REAM, NORMAN B.
EASTMAN, SYDNEY C.	RYERSON, MARTIN A.
ELLSWORTH, JAMES W.	SCHNEIDER, GEORGE
FITZSIMONS, CHARLES	SKIFF, F. J. V.
GAGE, LYMAN J.	STOCKTON, JOSEPH
GETTY, HENRY H.	SMITH, BYRON L.
GUNSAULUS, FRANK W.	SMITH, WILLARD A.
GUNTHER, C. F.	SPRAGUE, A. A.
HALE, WILLIAM E.	STONE, MELVILLE E.
HARPER, WILLIAM R.	WALKER, EDWIN
HATCH, AZEL F.	WALLER, R. A.
HEAD, FRANKLIN H.	WALSH, JOHN R.
	WILLIAMS, NORMAN

DECEASED.

SCOTT, JAMES W.	BISSELL, GEORGE F.
	PULLMAN, GEORGE M.

LIFE MEMBERS.

By the payment of five hundred dollars.

ADAMS, GEORGE E.	MCCORMICK, MRS.
ALDIS, OWEN F.	MCCORMICK, CYRUS H.
ARMOUR, P. D.	MCCORMICK, HAROLD F.
BLAIR, CHAUNCEY J.	McNALLY, ANDREW
BARTLETT, A. C.	MACKAY, JOHN W.
BARRETT, S. E.	MacVEAGH, FRANKLIN
BOOTH, W. VERNON	MITCHELL, J. J.
BURNHAM, D. H.	MURDOCH, THOMAS
BUTLER, EDWARD B.	NEWELL, A. B.
CARTER, JAMES S.	OGDEN, MRS. FRANCES E.
CARTON, L. A.	ORR, ROBERT M.
CHALMERS, WILLIAM J.	PEARSONS, D. K.
COOPER, FRANK H.	PIKE, EUGENE S.
CRANE, R. T.	PORTER, GEORGE T.
DEERING, CHARLES	PORTER, H. H.
DOANE, J. W.	PORTER, JR., H. H.
DRAKE, TRACY C.	REAM, MRS. CAROLINE P.
FARGO, CHARLES	REAM, NORMAN B.
FARWELL, WALTER	RUSSELL, EDMUND A.
FAY, C. N.	RYERSON, MRS. CARRIE H.
FIELD, STANLEY	RYERSON, MARTIN A.
FULLER, WILLIAM A.	SCHLESINGER, LEOPOLD
GARTZ, A. F.	SCHNEIDER, GEORGE
GRISCOM, CLEMENT A.	SCOTT, ROBERT S.
GROMMES, JOHN B.	SEAVERN, GEORGE A.
HAMILL, ERNEST A.	SHERMAN, JOHN B.
HEALY, P. J.	SINGER, C. G.
HIBBARD, W. G.	SMITH, BYRON L.
HILL, LOUIS W.	SMITH, ORSON
HUGHITT, MARVIN	SPRAGUE, A. A.
HUTCHINSON, C. L.	SPRAGUE, OTHO S. A.
INGALLS, M. E. [PORTER	STUDEBAKER, CLEM.
ISHAM, MRS. KATHERINE	STURGES, GEORGE
JOHNSON, M. D., FRANK S.	THORNE, GEORGE R.
JOHNSON, MRS. ELIZABETH	TREE, LAMBERT
JONES, ARTHUR B. [AYER	WELLING, JOHN C.
KEITH, ELBRIDGE G.	WELLS, M. D.
KIMBALL, W. W.	WHEELER, GEORGE HENRY
KING, FRANCIS	WILLARD, ALONZO J.
KING, JAMES C.	WOLFF, LUDWIG
KIRK, WALTER THOMPSON	

ANNUAL MEMBERS.

ADAMS, CYRUS H.
ADLER, DANKMAR
ALDRICH, FRED
ADAMS, MILWARD
ALLERTON, ROBERT H.
ALLERTON, MRS. S. W.
AMBERG, WILLIAM A.
ARMOUR, GEORGE A.
ARNOLD, J. B.

BAILEY, EDWARD P.
BAKER, ALFRED L.
BAKER, SAMUEL
BALDWIN, WILLIS M.
BANE, OSCAR F.
BANGA, DR. HENRY
BARNES, CHARLES J.
BARNHART, ARTHUR M.
BARRELL, JAMES
BARRETT, S. E.
BARTLETT, WILLIAM H.
BATCHELLER, W.
BEAUVAIS, E. A.
BECK, CHARLES A.
BECKER, A. G.
BEECHER, MRS. JEROME
BEIDLER, FRANCIS
BELDEN, J. S.
BILLINGS, C. K. G.
BILLINGS, DR. FRANK
BINGHAM, A. E.
BIRKHOFF, JR., GEORGE
BLACKMAN, W. L.
BLACKSTONE, T. B.
BLAINE, MRS. EMMONS
BLAIR, HENRY A.
BLAIR, WILLIAM
BLISS, SAMUEL E.
BOAL, CHARLES T.
BONNEY, CHARLES C.
BOOTH, A.

BORDEN, JAMES U.
BOTSFORD, HENRY
BOUTON, C. B.
BOUTON, N. S.
BRADLEY, CHAS. FREDERICK
BRADWELL, JAMES B.
BRAINERD, E. R.
BRAUN, GEORGE P.
BREGA, CHARLES W.
BREMNER, DAVID F.
BROOKS, JAMES C.
BROWN, GEORGE F.
BROWN, JOHN H.
BROWN, WILLIAM L.
BURLEY, AUGUSTUS H.
BURLEY, CLARENCE A.
BURLEY, FRANK E.
BURNET, WILLIAM H.
BYRAM, A.

CABLE, R. R.
CANNELL, S. WILMER
CARPENTER, A. A.
CARPENTER, MYRON J.
CHANDLER, C. C.
CHANDLER, FRANK R.
CHAPPELL, C. H.
CHENEY, C. C.
CLARK, JONATHAN
CLARKE, CLINTON C.
CLIFF, CAPTAIN JOHN
CLOUD, JOHN W.
COBB, S. B.
COMAN, SEYMOUR
COMSTOCK, WILLIAM C.
CONKLING, ALLEN
CONOVER, CHARLES H.
COOLBAUGH, MRS. ADDIE R.
COOLIDGE, CHARLES A.
COONLEY-WARD, MRS. JOHN C.
CORWITH, CHARLES R.

COWAN, W. P.
COX, ALFRED J.
CRANE, CHARLES R.
CROSBY, WILLIAM HOWARD
CUDAHY, JOHN
CULVER, MRS. CHARLES E.
CUMMINGS, E. A.
CURTIS, D. H.

DAL, M.D., JOHN W.
DARLING, MRS. ADELINE
DAVIS, LEWIS H.
DAY, ALBERT M.
DAY, CHAPIN A.
DEAN, THAD.
DEERING, WILLIAM
DELANO, F. A.
DEMMLER, K.
DICK, A. B.
DILLMAN, L. M.
DODGE, G. E. P.
DUDDLESTON, GEORGE
DUMMER, W. F.
DUNHAM, MISS M. V.
DURAND, ELLIOTT
DURAND, H. C.
DWIGHT, JOHN H.

EDMUNDS, ABRAHAM
EDWARDS, J. A.
EISENDRATH, W. N.
EMMERICH, CHARLES

FAIR, R. M.
FARNSWORTH, GEORGE
FEATHERSTONE, A.
FELSENTHAL, H.
FERGUSON, B. F.
FERGUSON, CHARLES H.
FISCHER, FREDERICK
FISH, STUYVESANT
FISHER, L. G.
FLANNERY, JOHN L.
FLERSHEM, LEM W.
FLOWER, JAMES M.
FOREMAN, EDWIN G.
FOREMAN, OSCAR G.
FORSYTH, ROBERT
FRANK, HENRY L.
FRANK, MAX
FRANKENTHAL, L. E., M.D.

FRASHER, JOHN E. L.
FREER, NATHAN M.
FREYTAG, MORITZ
FULLER, O. F.
FÜRST, CONRAD
GANS, SAMUEL
GATES, J. W.
GAYLORD, FREDERIC
GIBBS, JAMES S.
GIFFORD, C. E.
GIFFORD, I. CUSHMAN
GLESSNER, J. J.
GOODRICH, A. W.
GORDON, EDWARD K.
GORMULLY, R. PHILIP
GREEN, E. H. R.
GREY, CHARLES F.
GREY, WILLIAM L.
GRIFFIN, T. A.
GRISWOLD, E. P.
GROSS, S. E.
GUION, GEORGE MURRAY
GURLEY, W. W.

HAMBLETON, C. J.
HAMILTON, HENRY E.
HAMILTON, I. K.
HANECY, ELBRIDGE
HANSON, DAVID N.
HARBECK, EUGENE
HARDING, AMOS J.
HARRIS, D. J.
HARRIS, GEORGE B.
HARRIS, JOHN F.
HARRIS, N. W.
HASKELL, EREDERICK T.
HEARD, DWIGHT BANCROFT
HEATH, ERNEST W.
HELMER, FRANK A.
HENNING, FRANCIS A., M.D.
HERTLE, LOUIS
HINES, EDWARD
HITCHCOCK, R. M.
HOLDOM, JESSE
HOLT, D. R.
HOLT, GEORGE H.
HOPKINS, JOHN P.
HORNER, ISAAC
HOSKINS, WILLIAM
HOUGHTELING, JAMES L.

HOWLAND, WALTER M.
HUTCHINSON, MRS. B. P.

ILIFF, WILLIAM H.
INGALS, E. FLETCHER
INGALS, EPHRAIM, M. D.
INSULL, SAMUEL
ISHAM, EDWARD S.

JANES, JOHN J.
JEFFERY, THOMAS B.
JENKINS, GEORGE H.
JENKINS, T. R.
JOHNSON, J. M.
JONES, J. S.

KAMMERER, F. G.
KAVANAGH, CHARLES J.
KEEFER, LOUIS
KEENE, JOSEPH
KEEP, ALBERT
KEITH, W. SCOTT
KELLEY, WILLIAM E.
KELLOGG, MRS. C. P.
KENT, THOMAS
KENT, WILLIAM
KIMBALL, EUGENE S.
KIMBALL, GEORGE F.
KIMBALL, MRS. MARK
KIRCHBERGER, S. H.
KLEINE, HENRY
KOEHLER, THOMAS N.

LAFLIN, ALBERT S.
LAFLIN, ARTHUR K.
LAFLIN, GEORGE H.
LAFLIN, LYCURGUS
LAMB, CHARLES A.
LAMB, FRANK H.
LARTZ, W. C. C.
LAWRENCE, EDWARD F.
LAWSON, VICTOR F.
LAY, A. TRACY
LEFENS, THIES J.
LEIGH, EDWARD B.
LEITER, JOSEPH
LEWIS, JAMES F.
LINCOLN, ROBERT T.
LINN, W. R.
LLOYD, EVAN
LOEWENTHAL, B.

LOGAN, F. G.
LOMBARD, JOSIAH L.
LORD, J. B.
LOWDEN, FRANK O.
LOWTHER, THOMAS D.
LOWY, HAIMAN
LYON, GEORGE M.
LYON, THOMAS R.
LYTTON, HENRY C.

McCREA, W. S.
McGUIRE, REV. H.
McLENNAN, J. A.
McWILLIAMS, LAFAYETTE
MACFARLAND, HENRY J.
MAGEE, HENRY W.
MAIR, CHARLES A.
MANSON, WILLIAM
MANSURE, E. L.
MANVEL, MRS. ANNA F.
MARKWALD, LIEUT. ERNST
MARSHALL, GEORGE E.
MATTHIESSEN, C. H.
MAY, FRANK E.
MAYER, DAVID
MAYER, LEVY
MEAD, W. L.
MERRICK, L. C.
MERRYWEATHER, GEORGE
MEYER, MRS. M. A.
MILLER, CHARLES P.
MILLER, JOHN S.
MILLER, ROSWELL
MILLER, THOMAS
MILLER, DR. TRUMAN W.
MIXER, C. H. S.
MOORE, L. T.
MOORE, N. G.
MOORE, SILAS M.
MORISON, GEORGE S.
MORRIS, EDWARD
MORRIS, IRA
MORRIS, NELSON
MORRISON, JAMES W.
MORSE, JAY C.
MOULTON, GEORGE M.
MULLIKEN, A. H.
MULLIKEN, CHARLES H.
MUNRO, WILLIAM
NATHAN, ADOLPH

NELSON, MURRY
NEVIN, W. G.
NOLAN, JOHN H.
NORTON, O. W.
NOYES, LA VERNE W.

OEHNE, THEODORE
ORB, JOHN A.
ORTSEIFEN, ADAM
OSBORN, HENRY A.
OTIS, L. B.

PALMER, MILTON J.
PALMER, PERCIVAL B.
PATTERSON, W. R.
PEARSON, EUGENE H.
PEASE, JAMES
PEASLEY, J. C.
PECK, CLARENCE I.
PECK, GEORGE R.
PECK, MRS. MARY K.
PEEK, W. H.
PETERS, HOMER H.
PETERSEN, GEORGE L.
PETERSON, WILLIAM A.
PETTIBONE, A. G.
PIETSCH, C. F.
PINKERTON, W. A.
POND, IRVING K.
POPE, MRS. CHARLES B.
PORTER, MRS. JULIA F.
PORTER, WASHINGTON
PRUSSING, EUGENE E.

QUICK, JOHN H. S.

RABER, P. W.
RANDALL, THOMAS D.
RAYNER, JAMES B.
REHM, JACOB
REID, W. H.
REW, HENRY C.
RIPLEY, E. P.
ROBINSON, J. K.
ROSENBAUM, JOSEPH
ROSENBERG, JACOB
ROSENFELD, MAURICE
ROSENTHAL, OSCAR
RUMSEY, GEORGE D.
RUNNELLS, J. S.
RYERSON, MRS. MARTIN

SCHAFFNER, JOSEPH
SCHMIDT, GEORGE A.
SCHMIDT, DR. O. L.
SCHMITT, ANTHONY
SCHNEIDER, OTTO C.
SCHWARTZ, G. A.
SCULL, HENRY
SEARS, JOSEPH
SEIPP, MRS. C.
SEIPP, W. C.
SELFRIDGE, HARRY G.
SELLERS, FRANK H.
SELZ, MORRIS
SENN, MRS. N.
SEWELL, BARTON
SHEDD, JOHN G.
SHERWOOD, H. M.
SHIPMAN, DANIEL B.
SHORTALL, JOHN G.
SIMMONS, J. J.
SINGER, A. L.
SKINNER, THE MISSES
SMITH, EDWARD E.
SMITH, F. B.
SMITH, FRANK J.
SMITH, JOHN C.
SMITH, O. C.
SMITH, ROBERT J.
SNOW, MISS HELEN E.
SOMERVILLE, R.
SOPER, ALEXANDER C.
SOPER, JAMES P.
SOUTHWELL, H. E.
SPENCE, MRS. ELIZABETH E.
SPOOR, J. A.
STANLEY, FRANK W.
STEELE, HENRY B.
STILES, JOSIAH
STOCKTON, JOHN T.
STRAUS, SIMON
STRAUSSER, FRANK
STUART, ROBERT
SWIFT, G. F.

TEMPLETON, THOMAS
TILTON, MRS. L. J.
TOBEY, FRANK B.
TRIPP, C. E.
TRUDE, A. S.
TRUMBULL, PERRY

TURBIN, LOUIS M., M.D.
TURNER, E. A.
TURNER, VOLUNTINE C.
TYRRELL, JOHN
TYSON, RUSSELL

UIHLEIN, EDWARD G.
UNZICKER, OTTO

VIERLING, ROBERT

WACKER, CHARLES H.
WAIT, HORATIO L.
WALKER, GEORGE C.
WALKER, HENRY H.
WALKER, JAMES R.
WALKER, WILLIAM B.
WALKER, EDWARD C.
WARNER, EZRA J.
WATSON, A. D.
WATSON, WILLIAM J.
WEBSTER, GEORGE H.
WELLS, B. R.

WHEELER, CHARLES W.
WHEELER, FRANCIS T.
WHITE, A. STAMFORD
WHITEHEAD, W. M.
WHITEHOUSE, FRANCIS M.
WICKES, T. H.
WILLIAMS, SIMEON B.
WILLING, MRS. HENRY J.
WILSON, E. C.
WILSON, GEORGE C.
WILSON, M. H.
WILSON, W. M.
WING, DR. ELBERT
WINK, HENRY
WOLF, FRED. W.
WOOD, JOHN H.
WOOD, S. E.
WOODCOCK, LINDSAY T.
WOOSTER, CLARENCE K.
WRIGHT, THOMAS A.
YERKES, CHARLES T.

DECEASED.

BONFIELD, JOHN

KING, HENRY W.

DE KOVEN, JOHN

FIG. 1. HORIZONTAL SECTION

This bracket admits of the shelf being raised or lowered at will, thus securing such angle as may be desired. For certain installations the bracket is made with a plate on the back for screws; it is then fastened directly to the wall or screen, thereby avoiding the use of wall plate. A narrow strip placed on the top and parallel with the bracket secures one end of the material.

DETAIL OF CASE FRAME TOP.

This case is designed with a view to giving a maximum side light without a center support, and a self-sustaining top. The metal bar shown in plate runs all the way around and across the center, the whole being bolted together. In large cases the bar is of wrought iron one-half inch thick and four inches wide.

VERTICAL SCREEN.

This screen forms either a central partition or a back to a case. The objects are placed on the face. The interior frame is made of 2-inch material and both sides are sheered with 1/2-inch pine; over this is stretched a cover of sign-writer's muslin upon which an ebony finish is placed. Its adaptability and convenience are unquestioned.

PL. XXVIII. HINGED SHELF SUPPORT.

This bracket admits of the shelf being raised or lowered at will, thus securing such angle as may be desired. For certain installations the bracket is made with a plate on the back for screws; it is then fastened directly to the wall or screen, thereby avoiding the use of wall plate. A narrow strip placed on the top and parallel with the bracket secures one end of the material.

DETAIL OF CASE FRAME TOP.

This case is designed with a view to giving a maximum side light without a center support, and a self-sustaining top. The metal bar shown in plate runs all the way around and across the center, the whole being bolted together. In large cases the bar is of wrought iron one-half inch thick and four inches wide.

VERTICAL SCREEN.

This screen forms either a central partition or a back to a case. The objects are placed on the face. The interior frame is made of $\frac{7}{8}$ -inch material and both sides are sheathed with $\frac{1}{2}$ -inch pine; over this is stretched a cover of sign-writer's muslin upon which an ebony finish is placed. Its adaptability and convenience are unquestioned.

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